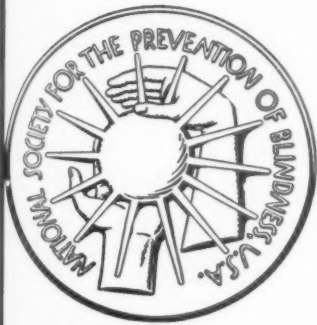


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THE SIGHT-SAVING REVIEW



SPRING, 1959

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THE SIGHT-SAVING REVIEW

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Spring, 1959

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GLAUCOMA SCREENING IN ALLEGHENY COUNTY

MURRAY F. McCASLIN, M.D.

Professor of Ophthalmology, University of Pittsburgh

A program which produced an amazing public response, and not only detected unknown glaucoma but afforded an excellent means of education in eye care.*

I WANT to preface this report by stating that any one of the 80 ophthalmologists in Allegheny County who participated in this survey knows the program well and is competent to report on it. I am presenting it here as chairman of the Advisory Committee of the Pittsburgh Branch, Pennsylvania Association for the Blind.

A mass glaucoma screening program, with unified medical sponsorship and a plan for adequate follow-up, was conducted in Allegheny County, Pennsylvania for three consecutive evenings last fall and yielded the unprecedented number of 21,197 persons tested.

The program originated with the prevention of blindness department of the Pittsburgh Branch, Pennsylvania Association for the Blind, which functions with a medical advisory committee of seven ophthalmologists and five representatives of allied medical specialties. In discussing the possibilities of mass screening, Mrs. Marcella Goldberg, our director of welfare services, her associate, Miss Margaret Gnade, and the advisory committee decided that the program might be

large enough to warrant amplifying the committee to include the chief of the eye service of each of the 24 hospitals in Allegheny County.

This enlarged committee met, was unanimous in approving the project, and recommended that:

1. The program be conducted under the aegis of the prevention of blindness department of the Pittsburgh Branch, Pennsylvania Association for the Blind.
2. There be unified medical sponsorship of the Allegheny County Medical Society and the Pittsburgh Ophthalmological Society.
3. All general hospitals sponsor and participate in the program.
4. Advantage be taken of publicity and public service time of radio, TV and newspapers during September Sight-Saving Month and October United Fund Drive.
5. The screening be done simultaneously for three successive evenings in the out-patient departments of the hospitals.
6. Each chief of service assume responsibility for securing the cooperation of his hospital, and help make local arrangements.
7. The Pennsylvania Association for the Blind arrange all publicity con-

* Presented at the Annual Conference of the National Society for the Prevention of Blindness, New York, February 25, 1959.

tacts, prepare necessary materials for the screening, arrange for their distribution, and make follow-up plans.

Data Recorded

Two weeks later the committee met again. Approval of the County Medical Society, the Pittsburgh Ophthalmological Society, and the local hospitals had been obtained and plans were developed for the type of tests that were to be administered. It was decided to record the patient's name, age, address, visual acuity with and without correction, tension, and fundus findings. Other pertinent data to be obtained were the date of last eye examination, by whom, the name of the family physician, family history of glaucoma and whether tension had ever been taken before. Since time was limited and many models of Schiøtz tonometers were to be used and there would be a variation in the number on the scale on the tonometer in relation to its value expressed in mm. of mercury, it was decided to record the tonometer findings by the number on the scale, the weight used, and later work out the normal value.

Consideration was given to the possibility of doing fields with a Harrington screener. This idea was discarded as too time-consuming for the personnel available.

In order to secure full cooperation of the medical society, the family physician in particular, the committee recommended that direct referral from the screening center be forbidden. All referrals had to be made by the family physician, except in those instances when the patient had been seen previously by an ophthalmologist. A letter explaining the program and soliciting cooperation was sent from

the president of the Ophthalmological Society to each member of the Allegheny County Medical Society.

Publicity Media

Publicity was concentrated in a one-week period, utilizing all forms of publicity media. The County Medical Society Bulletin carried an editorial on glaucoma. One of the local TV stations gave exclusive public service-time coverage, by news releases, a TV minute-film showing our mayor having his tension taken, and women's feature programs. The other TV and radio stations carried the story as a news release and the metropolitan, suburban and foreign language newspapers likewise devoted much space to front-page stories with pictures of actual screening procedures. The educational TV station preempted a valuable time slot for a half-hour show on glaucoma. The public relations committee of the Pittsburgh Ophthalmological Society provided speakers for these radio and TV programs and wrote copy for the medical information released in the papers. The public service contribution was beyond all expectation.

Unprecedented Response

Based on previous local experience with free polio shots and chest x-rays, we anticipated that at most each of the 24 hospitals would have approximately 200 persons in the three evenings, yielding a total of 4,800 persons to be screened. Volunteer personnel was drafted with this in mind and the 80 physicians were divided into three teams, each team to cover one evening. At four o'clock the first evening, an hour before the screening program was to start, it became evi-

dent that all of the ophthalmologists were going to be needed, and so it continued for the remaining two evenings. By the end of the first evening 5,792 persons were seen and uncounted hundreds turned away at each hospital. The second night, with improved facilities, 7,002 were seen and the final night 8,403, a total of 21,197.

Each person screened was given a pamphlet on glaucoma, and a card stating that he had been screened through the courtesy of the sponsoring organizations. Glaucoma pamphlets were depleted quickly, and "Take Care of Your Eyes" and "Eye Cues for Eye Health" from the National Society, along with "Whom Shall I Consult" from the American Medical Association were then substituted.

Results of Screening

Following the screening all cards were returned to the Pittsburgh Branch for sorting; 1,112 patients with elevated tensions and 486 with lens changes or fundus findings were recommended for further examination and follow-up. A letter was sent to each person, and a letter to his physician recommending further eye care. With the letter to the physician went a copy of the screening card, and an additional card for his report. Within two months a second follow-up letter was sent to those persons from whom reports had not been obtained. Now telephone calls are being made where possible and eventually there will be visits to the homes of persons who cannot be reached by phone. Here we plan to secure the help of visiting nurses.

All of the cards were coded for key-punching by volunteers and eight of the local corporations have donated

the time of their keypunch operators for translating this data to IBM cards. These cards will be processed at the University of Pittsburgh's computation department so that a statistical evaluation can be made of the eyes of the 21,197 people over the age of 40 who were screened.

Each hospital worked out its own plan for volunteer help. In most of them nurses took visual acuities. Volunteer clerks and women from auxiliaries took histories and did recording. When this screening is repeated a training period for volunteers will have to be conducted so that all recording is uniform, and we may use a form that can be given directly to the keypunch operator—thus eliminating many hours of volunteer help.

Ultimate Aim of Program

From the standpoint of the ophthalmologist the obvious purpose of the screening program was to detect unknown glaucoma. The program must be carried much further if the ultimate aim is to be achieved—that is, to prevent unnecessary blindness. The ophthalmologist contributed his time as a public service, and felt that his responsibility ended when the patient was advised to consult his family physician.

This should have been acceptable if one could assume that the patient was able to assimilate a hastily given recommendation. Proof to the contrary was evidenced by the fact that 1,112 letters were sent in October to persons suspected of having elevated tensions. Seven hundred second letters were sent in January and direct contacts are now being made with 360 persons who have not as yet reported that they have followed the recom-

mentations given them at the time of screening.

Consequently the glaucoma suspect often needs further explanation in order to comprehend that more thorough examination is necessary and that subsequent treatment may be prescribed. In explaining this to many patients the family physician does an excellent job, but we found that a sizable segment had no family physician. In this group organized planning should rest with the social agency staffed with personnel trained to perform this type of service and dedicated to the prevention of blindness.

Before another screening is done all tonometers will be calibrated for the same Schiøtz scale. The committee had decided to use 26 mm. Hg. as the point of referral, and then found that in one hospital this had to be changed to 30, and at another 24.4 was the point of referral. This created some problems, and unnecessarily complicated the referrals.

Conclusions

The conclusions which can be drawn from this mass screening are:

1. The program has to be agency-centered for purposes of neutrality, organization and follow-up.
2. Complete medical sponsorship and cooperation insures good community relations.
3. The participating hospitals received valuable aid in their own public relations programs.
4. Good publicity is essential for the success of the program.
5. Persons not screened are aware of and asking for tonometry from their own ophthalmologists.
6. The screening not only detected unknown glaucoma, but provided a

means for excellent public education on the need for, and the values of, adequate eye care.

RESEARCHES IN SEEING

An article by S. K. Guth in the July-September, 1958 issue of the magazine *Light* emphasizes that a number of factors must be carefully considered and evaluated before footcandle levels can be established for typical tasks. The basic factors of seeing in relation to illumination have been studied by Dr. H. R. Blackwell for the Illuminating Engineering Research Institute. His data were based on the vision of young observers. Older persons need more light than young people to perform a given task, and those with even a slight impairment of vision need considerably more light than those with normal vision.

Based on the Blackwell data, the curves for accuracy, speed, contrast sensitivity and visual acuity rise with illumination, all reaching optimal values in the 400-800 footlambert range, which is about the brightness of green grass in full sunlight. If the reflectance is 80 per cent (such as from glossy white paper) the footcandle range is 500-1,000 for easy tasks; hard tasks or a dark background may need up to 10,000 footcandles.

Visibility is only one element in optimum seeing. New studies by Dr. M. Alpern of the University of Michigan show that the ocularmotor functions improve in accommodation-convergence with brightness levels up to 1,000 footlamberts, while the blink rate and nervous muscular tension decrease. Freedom from glare, and a uniform brightness of the whole room, are important to visual comfort.

GAPS IN FIREWORKS CONTROL

HELEN AUGUR

Several states have no control laws, and bootlegging is still a serious problem.

DURING the first 30 years of this century more people were killed and injured celebrating the nation's independence than in the War of Independence itself. Fireworks killed 4,290 persons and severely injured 120,000, as compared to the Revolutionary War toll of 4,044 dead and 6,000 wounded.

The American Medical Association, shocked by the toll of nearly 500 killed in Fourth of July celebrations in 1903, began keeping count of fireworks accidents. Their statistics were based only on reports sent in by doctors and hospitals, and were far from complete. In 1937 there were 310 eye injuries, in 16 cases involving the loss of one or both eyes. In 1946 there were 45 eye injuries, an improvement of 86 per cent over the tragedies of a decade before. At this point the AMA discontinued the collection of annual figures.

What had happened in that decade was the beginning of state control of fireworks, limiting their use to authorized public displays. By 1946, 18 states had adopted the model law drawn up by the National Fire Protection Association. Today 29 states have the model law, 12 limit fireworks to certain specified types and sizes, and only eight have no statewide control. Moreover, a Federal law prohibits the shipment of fireworks into states where their use by individuals is banned. Decidedly, our national folly

of killing, maiming and blinding people, mostly children, on the Glorious Fourth has abated. But the problem is not solved, and the danger of losing some of our recent gains is not over.

Parents, teachers, public health workers and all good citizens need to understand the rather complicated question of safe fireworks. Nobody wants to abolish the beauty and thrill of a pyrotechnic display. Nobody wants an aftermath of death and blindness, nor is this the inevitable price we must pay for firecrackers and rockets.

Provisions of the Law

The model state law is aimed at making fireworks safe. It was prepared by fire marshals in 1937-38, and adopted by the International Association of Chiefs of Police. It is an excellent basic law which works well in any or every state. The term "fireworks" is carefully defined to include dangerous devices, and to exclude harmless ones like paper caps and the toys using them, provided they satisfy the regulations of the Interstate Commerce Commission. As so defined, fireworks must not be sold or used in the state except under permit from the fire marshal or equivalent authority, granted for supervised public displays.

Since the law regulates the use and sale of fireworks but does not abolish

them, one clause has unavoidably been a source of trouble:

"Nothing in this act shall be construed to prohibit any resident wholesaler, dealer or jobber to sell at wholesale such fireworks as are not herein prohibited; or the sale of any kind of fireworks provided the same are to be shipped directly out of state. . . ."

This inevitably provided a loophole for the manufacturers and sellers to bootleg fireworks into states where their private use was forbidden. Children had only to look into their comic books or magazines to find the address of a firm offering firecrackers for sale through the mails; trucks laden with forbidden fireworks drove into the model-law states to make quick and quiet sales.

Illinois Campaign

Through the efforts of the Illinois Society for the Prevention of Blindness there had been some regulation of fireworks in that state since 1942, though Illinois did not adopt the model law until 1950. As part of its long educational campaign the Society began collecting its own fireworks statistics when the American Medical Association ceased to do so. In 1951 it recorded 56 eye injuries for Illinois (the AMA had been able to obtain reports of only 45 for the entire nation in 1946); and in 1952 the count was 55. In those two years, under the model law, 13 children lost the sight of an eye or the eye itself.

Meanwhile, Illinois was spearheading a federal drive against the bootlegging of fireworks. Representative Marguerite Stitt Church introduced a bill in the House of Representatives forbidding their transportation into a state where private use or sale was

outlawed. Senator Alexander Wiley introduced a similar bill in the upper house, and during 1953 and the early part of 1954 there was a battle royal with the fireworks manufacturers.

Attempts to Weaken Laws

In 1953 Representative Edward T. Miller of Maryland sponsored a bill in Congress which if passed would have had the effect of nullifying the state control laws. Since it was the first of three similar measures presented between 1953 and 1957, and since there may be other attempts of the kind in the future, the Miller bill is of particular interest. It proposed that the Interstate Commerce Commission determine what fireworks were safe for the public to use, and what particular devices complied with these standards, so that they could be identified in commerce. In other words, the bill asked the ICC to undertake a task for which it had no experience, staff, or working facilities. The ICC opposed the measure as "extremely undesirable" in a report to the Senate, whose judiciary committee condemned the bill as perhaps unconstitutional and certainly an unwarranted federal interference in state affairs.

In committee hearings on the Miller bill some of the commercial aspects of the fireworks lobby were revealed. Franklin M. Foote, M.D., executive director of the National Society for the Prevention of Blindness, testified at the hearing of April 22, 1953, about the illicit sale of fireworks in model-law states. He quoted an article in the *Hartford Times* of July 6, 1951, which estimated that the fireworks business in the one small state of Connecticut ran to about seven millions a year. Dr. Foote mentioned the disclosure just

made in the same state of a \$1,500 bribe given a legislator by a fireworks manufacturer who was fighting the introduction of the model control law into Connecticut. Both the manufacturer and the legislator were convicted in Superior Court, and their appeal was denied by the state Supreme Court. Partly as a result of this scandal, the Connecticut legislature promptly passed the model control law.

Dr. Foote's testimony was unwittingly supported by Representative Miller himself, who testified at the same hearing that he represented some Maryland fireworks manufacturers who would be put out of business if they could not continue to bootleg fireworks into states where their sale was illegal.

The Miller bill failed to find support, and in 1954 the Church-Wiley measure was approved by Congress, and became Public Law 385. It has had on the whole a salutary effect in helping the states to enforce fireworks control. The law makes it a federal offense to transport fireworks into any state in a manner or for a use prohibited by the laws of that state. Offenders are subject to a maximum fine of \$1,000 or a year's imprisonment, or both. However, this has not stopped bootlegging, nor attempts by the fireworks interests to kill off the model state laws by a specious federal measure.

Kefauver-Chavez Bills

One of the opponents of the Church-Wiley bill was Senator Estes Kefauver of Tennessee, who introduced a fireworks manufacturer from his state at one of the hearings to argue against the bill. On March 5, 1955, Senators

Kefauver and Dennis Chavez introduced a bill identical with the Miller measure, except that it put the responsibility for determining the safety of fireworks on the Federal Trade Commission instead of the ICC. This attempt came to nothing, but on March 14, 1957, it reappeared unchanged as a bill sponsored by Senator Chavez.

A tremendous storm was aroused by this bill, S.1499. All the forces working for safety were mobilized, and protests poured into Congress. Like the ICC, the Federal Trade Commission did not relish the idea of taking on a task quite outside its prescribed functions. In a letter to Dr. Foote of July 5, 1957, John W. Gwynne, chairman of the FTC, wrote:

"The law presently places upon the Interstate Commerce Commission the duty of prescribing regulations to promote the safe transport of explosives and other dangerous articles. That Commission has promulgated various regulations relating to such articles, including fireworks. Section 836 of Title 18 of the United States Code [Public Law 385] prohibits the transporting of fireworks into any State for use or disposition in violation of that State's law. Thus, such proscription or regulation of fireworks as each State deems desirable in the interest of its citizens is reinforced by a Federal penal sanction, and lawful movement of fireworks in interstate commerce is regulated as to safety by the Interstate Commerce Commission."

Mr. Gwynne added that at the direction of the Commission he had reported to the Senate: "This Commission has no information indicating a need for any additional prohibition or regulation [of fireworks] and there-

STATE FIREWORKS CONTROL LAWS

As of January 1959

Sale and Use Restricted to Authorized¹ Public Displays (Model Law)

Alabama	1949	Kentucky	1950	North Carolina	1947
Arizona	1941	Maine	1949	Ohio	1941
Connecticut	1953	Maryland	1941	Oregon	1951
Delaware	1939	Massachusetts	1943	Pennsylvania	1939
Florida	1941	Michigan 1929, amended 1942		Rhode Island	1942
Georgia	1955	Minnesota	1941	Utah	1939
Idaho	1949	New Hampshire	1943	Vermont ²	1946
Illinois	1950	New Jersey	1937	West Virginia	1939
Indiana 1939, amended 1947		New Mexico	1949	Wisconsin	1947
Iowa	1937	New York	1940		

Limited to Certain Specified Types and Sizes

Arkansas	Montana	South Dakota
California	Nebraska	Virginia
Colorado	North Dakota	Washington
Kansas	South Carolina	Wyoming

No Statewide Control

Alaska	Missouri	Tennessee ³
Louisiana	Nevada	Texas
Mississippi	Oklahoma	

¹ Unrestricted sale and use of toy paper caps in accordance with terms of model law permitted in most of these states.

² Regulations of the State Fire Marshal, having the force and effect of law.

³ Fire Marshal Regulations control public displays of pyrotechnics but do not apply to individual use of fireworks.

fore does not recommend enactment of S. 1499."

The Chavez bill was never brought to a vote, but the fireworks interests are busy on the state level.

Recent Decisions

On the plea that a model state law bars perfectly harmless devices, fireworks interests have recently made two attempts to kill state laws by having a toy declared harmless.

In August 1957 a Franklin County judge in Pennsylvania declared the state fireworks act of 1939 unconstitutional. Presiding Judge Chauncey M. Deputy of the quarter sessions court

rendered a decision in the case of a toy cannon in which acetylene is exploded. He claimed the toy was harmless, and he was wrong on that score, since the device, the "Big Bang Toy Cannon," had been investigated by the National Fire Protection Association, which considered the calcium carbide mixture in the gun a menace to children—or adults, for that matter. However, the real import of this decision was that it went on to rule that Pennsylvania's model law violated the 14th Amendment of the U. S. Constitution, in that it interfered with the privileges of a citizen. Judge Dupuy said the law was too general, prohibiting the sale

"of any combustible or explosive composition or combination."

If the decision of this county judge had been upheld by the Superior Court, every model control law in the country would have been in danger. But the Commonwealth appealed, and the decision was reversed in a unanimous opinion on January 21, 1958. The fireworks law was upheld, and Judge C. H. Rhodes, who wrote the opinion, declared that the toy cannon was not harmless, and "children in particular need protection from such devices."

Sparklers are Deadly

In Illinois the fight to break the control law has centered around sparklers. On April 19, 1955, the state Supreme Court rendered a decision in a suit brought by fireworks interests that sparklers were harmless and exempt from the provisions of the model law. The court did not declare the law itself invalid, but at least the fireworks lobby had made inroads into its effectiveness. The next year the Illinois Society for the Prevention of Blindness found that sparklers accounted for 20 serious accidents and the death of a little girl. From 1950 through the July Fourth celebration of 1956, seven of the 11 deaths due to fireworks were caused by sparklers.

These allegedly harmless devices burn at 1,650 degrees Fahrenheit, leaving a steel core hot enough to sear flesh or set clothing afire.

The Society began a fight in the state legislature, with the fireworks lobby battling every step of the way, and in 1958 got a bill passed banning the sale of sparklers. The fireworks lobby is now trying to get the law repealed, and the fight continues.

Bootlegging Continues

Right across the country there is a pattern of illegal sale of fireworks. Two Oregon boys hitch-hiking across the border into Washington, where fireworks are not completely controlled, bought \$15.00 worth of firecrackers to be sold at home at a modest profit of 100 per cent. Similar reports come from many other states.

The biggest operators, of course, are professional bootleggers. In 1956 the Bergen County, N. J. police were reported to have said that illicit trade in firecrackers, Roman candles, sky-rockets, cherry bombs and other dangerous fireworks had reached the highest level since 1937, when the New Jersey control law went into effect.

Salesmen were bringing carloads of fireworks into the state from unrestricted areas and peddling them to children on abandoned lots and even at school street crossings. Openly advertised in comic books and children's magazines, fireworks were being shipped into the state through the mails or by express. In one town weeks before the Fourth, the police had found children setting off bootlegged fireworks, and had confiscated and destroyed quantities of them. Even more dangerous were homemade fireworks, or defective ones sold by small operators, which cause dreadful injuries.

When the laggard states join their sisters in passing the model control law, and when interested citizens in all states remain alert to the many dangers still inherent in our manner of celebrating our national birthday, it will deserve its rather premature title of "glorious."

THE INDUSTRIAL NURSE and the Vision Program

LOUISE CANDLAND, R.N.

Former Occupational Health Nursing Consultant
Employers Mutuals of Wausau, Wisconsin, New York Branch

In many plants the well-qualified nurse has proved to be a vital factor in focusing attention on eye problems.*

THE industrial nurse is a key person in eyesight conservation. Her specific duties are of course determined by the extent of the company's medical and health service, the eye hazards involved in its operations, and the community resources.

Three general principles apply in all plants: All nursing service should be under medical direction. Nurses should be guided by written medical directives approved by the consultant eye physician. Eye physicians should instruct nurses in any procedures with which the latter are not familiar.

Under a standard eye program the nurse assists the physician in eye examinations and in recording results. She may be given responsibility for screening tests of vision, with periodic rechecks. One of her chief responsibilities is the care of eye emergencies. She refers injured workers to the plant or eye physician when necessary, and assists in follow-up of such cases.

She has an important role in health supervision and control of infectious disease; helps instruct workers in eye health and safety; keeps on the alert for evidences of individual eye prob-

lems and for hazards and conditions that threaten eyesight. She is, in fact, a very important member of a team that includes safety and illuminating engineers and other plant personnel with responsibilities related to health and accident prevention.

Detecting Eye Trouble

Equipped with a knowledge of common eye diseases the nurse can help workers to obtain an early diagnosis of an eye condition and medical care when needed. For example, an employee might ask repeatedly for a "soothing" eye wash. The nurse who continues to give such treatment without finding out why the man makes these frequent complaints of discomfort may be missing a case of early glaucoma. If she is alert she asks certain questions:

Q. Do your eyes hurt a lot?

A. Yes, sometimes they feel like marbles.

Q. Do lights bother you?

A. Yes, that's why I won't work nights because the car lights hurt my eyes when I drive home.

Q. Do the lights look funny in any way?

A. Yes, sometimes they have rings around them.

* Digest of a paper presented at the 50th Anniversary Conference, National Society for the Prevention of Blindness, Philadelphia, March 12, 1958.

In such a case the nurse will tell the plant physician about the symptoms and follow his instructions as to referral to a specialist.

Importance of Medical Directives

As previously emphasized, in emergency and follow-up care of eye injuries the nurse at all times works under medical supervision. The written procedures set up by the plant physician and the ophthalmologist should include: nature, strength, and directions for use of drugs and antiseptics; specific instructions for removal of loose foreign bodies on the conjunctiva, and follow-up; procedure for referring to the eye physician cases of penetrating or embedded foreign bodies; chemical, thermal or flash burns; other emergencies; inflammation or infection.

The well-qualified nurse turns a deaf ear to all vendors who suggest that she try this new ointment or that new eye wash, and insists on following her physician's directions at all times. When giving eye care she prepares her patient so that he is comfortable and instructs him properly so that he can cooperate. She of course observes the cleanliness and the various techniques she has learned in her professional training, keeping the equipment sterile and separate from that used for other injuries. Her careful treatment and what she says during a patient's visit can greatly influence his attitude toward eye safety.

Individual instruction is of much value, but equally important in many plants is the nurse's responsibility to inform management of the incidence of eye injuries. This may be accomplished by regular reports, but sometimes these need to be supplemented

by telephone calls or personal visits to the official who has authority to take corrective action. Many a good eye protection program has been started by a nurse who used actual incidents to point out the need for unified action—by management and employees.

Small Plant Conditions

As a nurse who visits many small industries with no full-time nursing or medical service I am often appalled at the risks both workers and management take with eyes. Many of these small plants have as many eye hazards as some of the larger industries. Here is an all too common example, a plant with 125 employees, where chipping, grinding and handling of chemicals produce eye hazards. The worker with an eye injury is given so-called first aid or treats himself. If this doesn't work he is sent to a local ophthalmologist.

During a recent visit to this plant I looked at the first aid equipment. Each department had a kit which originally contained the usual assortment of standard items. Some interesting additions had been made for emergency care of eye injuries. This is what I found:

A jug of "eye wash," one-quarter full, made up specially at a local drug store, dated June 12, 1951, ingredients not specified.

Two eye cups per first aid box. No one knew when they were last washed.

Three open packages of cotton-tipped applicators which showed evidence of much handling and accumulated dust.

Five bottles of commercial eye wash with eye-cup stoppers, also showing evidence of much handling and dust.

Two bottles of argyrol—labeled, but no date of purchase.

One two-ounce bottle of what appeared to be iodine, unmarked, alongside argyrol bottle.

One unmarked bottle of what appeared to be alcohol.

Remedial Measures

About 60 per cent of workers in this country are employed in small plants, and conditions such as I have described indicate that hundreds of thousands of them are without benefit of any eye health and safety measures. One physician in private practice in an industrial area reported that of 2,267 plant employees treated for accidents in one year 397 (18 per cent) had eye injuries. Obviously, more attention from plant medical and executive personnel and the unions is indicated. Physicians who treat eye injuries in private practice might help to arouse plant managers to action by visiting the industries and advising on accident prevention and first aid.

A number of small plants are using part-time services of nurses and in such locations the nurse may have the opportunity to initiate an eye program. The increasing number of co-operative medical plans for small industries will undoubtedly lead to better visual care.

CONTACT LENS TECHNICIANS CERTIFIED IN TEXAS

The Texas Ophthalmological Association is now examining and certifying contact lens technicians, according to the *Texas State Journal of Medicine* for January 1959. It is believed that this is the first time medical certification has been provided for these technicians in any state. Candidates are given written and practical examinations by the Association's Council on Certification and Education for Ophthalmic Technicians.

DISPENSING BY PHYSICIANS

The following opinion of the Judicial Council of the American Medical Association has a bearing on the dispensing of eyeglasses. It is reprinted with permission from *The Journal of the Association*, issue of November 15, 1958.

QUESTION: What does the statement in Section 7 of the Principles (of Medical Ethics) mean when it says drugs, remedies, and appliances may be supplied by the physician provided it is in the best interest of the patient?

ANSWER: It is the opinion of the Judicial Council that this language was adopted to permit both the practicing physician and the local medical societies to evaluate the many factual situations incident to prescribing and dispensing which are bound to arise in the practice of medicine. Under this language the doctor is permitted to exercise his own best judgment when caring for his patients. It is known that there will be situations when it is necessary or desirable for a physician to dispense or supply what he has prescribed. The Principles permit this to be done. On the other hand, this broad language provides a means by which a component medical society can inquire into the facts of a particular practice. The profession thus can act to prevent abuse of discretion and protect patients from exploitation. In essence this language means that a physician in the exercise of sound discretion may dispense "in the best interest of his patient"; it does not authorize him to dispense solely for his convenience or for the purpose of supplementing his income.

PREPAID MEDICAL FEES

In the last decade the percentage of doctors' fees covered by prepaid insurance has increased from 6 to 31, and prepaid hospital fees from 27 to 57.

VISION SCREENING in Prince George's County

MARY A. THOMPSON, M.A.

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Upper Marlboro, Maryland

A progress report on a program that has had educational values for children, teachers, parents and community groups.*

PRINCE GEORGE'S COUNTY is one of the two large Maryland counties adjacent to the District of Columbia. It has a large system of 121 public schools with pupil enrolments ranging from 52 to 2,215. The system has expanded rapidly in the last ten years, and the extensive school health program now in existence has been developed during this period.

The vision and hearing screening program became standardized in the school year 1952-53. Vision screening with the Massachusetts Vision Kit has been conducted for grades two, five, eight and eleven plus referrals. The program was organized in such a manner that there have been educational values for children, teachers and community groups.

Part-time paid technicians, carefully selected and trained intensively, have carried on the screening. Regular in-service training for them has been maintained. In addition to the screening instruments a variety of auxiliary materials such as eye models, filmstrips, charts, posters and pamphlets

have been provided for use by the technicians.

These trained technicians have been particularly valuable not only to the vision screening program but to the total school health picture as well. There has been little public health nursing time spent in the schools due to a very small staff of nurses in the County Health Department. The screening technicians have constituted the only regular contact most schools have had with anyone in a health capacity. Their contribution has extended far beyond vision and hearing screening.

Obviously this group of technicians cannot take the place of adequate public health nursing service to the schools. The most imperative need of the total school health program, of which vision and hearing screening is a part, is the development of the County Health Department's public health nursing service.

When reported previously in 1956† the vision and hearing screening program had 11 trained technicians.

† Vision and Hearing Screening Program in Prince George's County, Maryland. Mary A. Thompson. *American Journal of Public Health*, Vol. 47, p. 200, February 1957.

* Presented before the National Society for the Prevention of Blindness session of the American Public Health Association, October 30, 1958; St. Louis, Missouri.

Seven of these did both vision and hearing; two vision only, and two hearing. The percentage of follow-up for those tested had risen from 32 per cent in 1952-53 to 62 per cent in 1955-56. While 62 per cent is far short of a desirable degree of follow-up it must be pointed out that this was achieved with practically no help from public health nursing service and with only one small vision clinic in the county conducted by a Seventh Day Adventist group.

Screening Extended

Since 1956 an additional grade has been added so that vision screening now covers grades one, three, five, eight and eleven plus referrals.

The test items for hyperopia and muscle imbalance have been eliminated for grades eight and eleven if visual acuity is normal. The National Society for the Prevention of Blindness had recommended that a statistical study be made of the number of referrals from Parts II and III of the Massachusetts Vision Test in grades eight and eleven, to see if time spent with the complete battery in secondary schools might better be devoted to an additional grade in elementary schools. The technicians reported very few referrals and the ophthalmologist acting as adviser to the program agreed to the change. This resulted in the present schedule of the complete battery for grades one, three and five, and visual acuity plus an interview for grades eight and eleven.

The program now has 13 trained technicians who are all doing dual screening—vision and hearing. This was made possible through the donation of complete sets of equipment for each technician by the Hyattsville

Lions Club. A coordinator for both of these services has been appointed.

Screening Instruments

Three different-type instruments are currently being used for screening. All utilize the battery of tests known as the Massachusetts Vision Test. They are: the Welch Allyn Massachusetts Vision Test; American Optical School Vision Screening Test; and Bausch and Lomb School Vision Test. It is felt that there are advantages and disadvantages in the use of each of these instruments under certain conditions.

Clinic Facilities

In 1956 there was one eye clinic in our county operated by a Seventh Day Adventist group. Since that time the superintendent of Prince George's General Hospital has set up a refraction clinic which has been operating for two years. Efforts are now being made to set up an additional clinic in the County Health Department which has moved into new quarters where space will be available. It is hoped that the Hyattsville Lions Club will donate equipment approved by the County Medical Society's ophthalmological committee.

Until approximately a year ago there was only one ophthalmologist in the county. This doctor had been appointed by the Medical Society as a consultant to the screening program. It was imperative to have additional medical resources and important to have a committee of several ophthalmologists as advisers. One ophthalmologist, a resident of the county with an office in the District of Columbia, had worked with the County Board of Education to set up a classroom for

partially seeing pupils in one of the elementary schools. This was done as a part of the Hyattsville Lions Club eye conservation program. This doctor and two other ophthalmologists now have each set up a branch office in the county. The Medical Society has appointed all four of these doctors to act as an advisory committee, and the initial meeting of the group will be called as soon as possible.

Health Department Service

The biggest block to increasing the percentage of follow-up has been the lack of public health nurses. The picture now looks much brighter since the County Health Department has a new building and has completely reorganized its staff. There are additional supervisory staff members plus an assistant health officer who is supporting the school program wholeheartedly. The immediate problem is to get more public health nurses as rapidly as possible.

For several years attempts were made to get the County Health Department to set up a demonstration whereby regular public health nursing service would be provided for a few schools. Through such a project it was hoped that the interest and support of parent-teacher associations could be enlisted for the development of a county-wide program. The department set up such a demonstration last fall. A strong county PTA Health Committee has been in existence for several years. The support of this group was instrumental last year in initiating the first county-wide school dental program. Their attention this year will be directed toward the public health nursing program, since this is the most important thing that can be

done, not only for the vision screening but for total school health.

It has been particularly helpful in the last year to have the Health Department assign one of its nurses as liaison to the screening program. She has attended all the meetings of the technicians and helped with special projects.

As the school system has grown more special services have been added. This is particularly true of the special education department which has a substantial program for pupils with low vision. Close coordination has been effected with this department.

Relationship with POB Societies

For some time a close working relationship has been established with the Prevention of Blindness Society of Metropolitan Washington and within the past three years with the National Society. Last year effective contacts were made with the Maryland Society also. This has been valuable to the vision screening program.

At the suggestion of the National Society color vision screening was initiated in a few schools last year on the junior high level. Dr. Louise Sloan of the Wilmer Eye Institute of Johns Hopkins University gave instruction and guidance to the technicians. The Hardy-Rand-Rittler Pseudoisochromatic Plates and the Macbeth Easel Lamps were used. During this school year the program is being extended to cover all boys in grade five plus referrals. The Hyattsville Lions Club donated the necessary equipment. An elementary school grade was chosen so that the information will be available before students enter junior high where some begin to think about future careers.

Relationship to Remedial Reading

The position of supervisor of reading clinic was established in our county in the fall of 1956. As this program developed problems arose regarding its relationship to vision screening. The Telebinocular was used in the remedial reading program while instruments with the Massachusetts Vision Test battery were used in vision screening. The difference in findings led to confusion among school personnel and parents. This resulted in spite of repeated efforts of personnel in both programs to minimize the problem.

In an attempt to improve the situation an extensive amount of time of vision screening personnel was given during 1957-58 to finding out more about the work in remedial reading. Attempts were also made to broaden the horizon of the remedial reading personnel by bringing them into contact with the vision screening and its objectives. In addition an arrangement was worked out whereby the coordinator for vision screening worked during the summer of 1958 with the supervisor of the reading program, testing children in the reading clinics with the Telebinocular. This gave further insight into the total situation.

Classroom Lighting

An initial attempt was made last year to prepare the screening technicians to work with teachers in improving classroom lighting. A meeting was held with the lighting engineers of the Potomac Electric Power Company. Light meters were purchased for all technicians and a variety of materials suitable for use in schools was made available to screening personnel. The continued development of this phase of the program is being studied.

Efforts in the direction of in-service training for the screening technicians have increased markedly in the last several years. In addition to a three-day session before school opens there are meetings with this group at least once each month; and in 1957-58 there were 13 additional meetings. A coordinator gives in-the-field supervision and training.

Future Plans

In addition to maintaining and improving the various phases of the program now under way the inauguration of some work on eye safety in school shops is anticipated.

A continuing goal is that of securing more effective vision screening follow-up.

The problem of transportation of indigent children to clinics must be studied and some approach worked out.

When there is adequate public health nursing service to the total school health program it may be desirable to re-evaluate the role of screening technicians.

HOW REGULAR TEACHERS CAN AID VISUALLY HANDICAPPED

How the classroom teacher can help the partially seeing child is discussed by Lorraine Galisdorfer in the December 1958 *NEA Journal*. The author, who is an itinerant teacher of the visually handicapped in the public schools, Kenmore, New York, estimates that 70,000 of the 78,000 partially seeing children in today's schools have no special services. She suggests what the regular teacher can do in providing materials, proper lighting, and routines for these children so that they can keep up with the class without strain.

Please Return the Eye to the Body

J. VAN DYKE QUEREAU, M.D.

Reading, Pennsylvania

LOOKING at some surrealist paintings in a museum lately, we were startled to see an eye floating about in space without a body. When you stop to think of it, we physicians have been segregating the eye from the rest of the body for years. Since 1850, when von Graefe became the father of ophthalmology, the ophthalmologist has made increasing use of his previous medical training for the diagnosis and treatment of diseases of the eye.

Concurrently, the general practitioner, the patient's personal physician, developed a "hands off" policy toward the eye except for his conscientious use of the ophthalmoscope. This has been a sad waste of medical talent. The ophthalmologist looking at a detached retina envies the patient's personal physician his superior knowledge of anoxic cell enzyme activity, and in the retinopathies, his closer touch with the mechanics of the general circulation.

His intimacy with the latest in general medicine makes the personal physician a natural for many of the steps he now avoids in the eye examination. For example, seven of the 12 pairs of cranial nerves are available to him through the eye. The optic nerve is under his direct vision. He can find visual field defects on the office wall or with a tangent screen and standard test objects. The oculomotor, trochlear, and abducens nerves can be tested by the cover and the diplopia

tests. There is no great mystery about these. The trigeminal jumps at you if you touch the cornea with a little cotton. The facial can hardly be missed. Alterations in the normal physiological nystagmus in the various directions of gaze reveal defects in the vestibular system. The personal physician can open the door to the pons through these nerves.

Now someone out there with the surrealists says that "early glaucoma and brain tumors have such slight signs that the personal physician will miss them." True, and he must keep this in mind as firmly as the ophthalmologist does.

It is time now to bring the eye back into the body where the personal physician can reach it for the diagnosis of general diseases. How can this be done? By frequent meetings between practitioners of general medicine and the ophthalmologists. They could discuss, for example, the differential diagnosis of a red eye, the retinopathies, and the evaluation of retinal vascular disease. The sphygmomanometer could be surprisingly well replaced by a direct visual analysis of the retinal arteries and arterioles. Innumerable subjects could be added—all to the mutual advantage of the patient, the personal physician, and the ophthalmologist.

The patient should be told that *the most important reason for an eye examination is the detection of disease*. He should know that for an observer with adequate medical training *the eye is a window* to many pathologic changes in

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the body. The personal physician and the ophthalmologist can look through this window together with plenty of room for both.

RISKS IN MODERN DRUGS

The dangers in local treatment of eye infections with anti-bacterial drugs were discussed in a recent symposium at the Dutch Ophthalmological Society, summarized in the *Survey of Ophthalmology* for October 1958. R. Voorhorst, a bacteriologist-allergist, L. H. Jansen, a dermatologist, and the ophthalmologist G. M. Bleeker warned against haphazard and prolonged use of antibiotics, steroids and other modern drugs.

As distinct from toxic reactions which are caused by excessive pharmacologic action there are allergic reactions of two sorts. The immediate type manifests itself by transient reactions such as rhinitis, and may produce shock and sudden death. The delayed or tuberculin type may produce more or less refractory skin reactions weeks after application of the drugs, and thus not be traced to them. Sensitization may cause acute reactions at a future date if the same drug is given locally or parenterally. The third risk in using these agents is that quiescent bacteria which have escaped the treatment may develop resistant strains.

Dr. Bleeker said that the ophthalmologist must keep these risks in mind, but pointed out the necessity of using some of these drugs in certain types of ocular inflammation. Penicillin or chloramphenicol (the latter rarely leads to reactions) must be used in the prophylaxis of penetrating wounds. In superficial inflammations

of the cornea, conjunctiva and adnexa the drug should be chosen on the basis of sensitivity tests, and streptomycin should be avoided if possible, while the sulfa drugs should be abandoned.

Dr. Irving H. Leopold, commenting on this symposium, agreed heartily, and added warnings against the steroids.

MEDICAL AID INCREASED

Federal contributions to the medical care of persons receiving public assistance have been increased by recent Congressional amendments to the Social Security Act. Combined State and Federal funds for medical services to the needy aged, the blind, the disabled and dependent children may mount to half a billion yearly.

As formerly, the Federal Government shares costs with the states on a sliding scale for aid to needy persons including the blind. In addition, the Federal Government pays \$3 a month for adults and \$1.50 for children exclusively for medical care, to states matching that amount. In the past, the state has been saddled with most of the expense for a case entailing heavy costs.

Charles I. Schottland, Commissioner of the Social Security Administration, in an address carried in the *Optometric Weekly* of October 2, 1958, estimated that about \$3,000,000 was spent annually for eye care under the assistance program. About 36 states, he said, make direct payments to the vendors of medical care, instead of leaving payment to the responsibility of the patient. Most of them provide for vision services, including examinations, refraction and glasses, on a fixed-fee basis.

Duke-Elder on Eye Exercises

BOOKS continue to appear advocating the discredited Bates system of eye exercises as a cure-all. Among recent titles are "Throw Away Your Glasses," "Help Yourself to Better Sight," "Sight Without Glasses," "Relax and See."

It is of interest in this connection to reprint the opinion of the eminent ophthalmologist, Sir Stewart Duke-Elder, from Volume IV of his famous *Text-Book of Ophthalmology* (Mosby, 1949). The following paragraphs appear in the chapter on "Eye-Strain and Visual Hygiene," page 4484:

"The lack of legitimate professional interest in these matters (orthoptic exercises, visual exercises) has left a clear field for their exploitation by the illegitimate practitioner; the opportunity has been seized with considerable enthusiasm, but in order to make the rather tedious business of eye-exercises more palatable and their inherent simplicity sufficiently impressive to convert the credulous, an irrelevant and usually ridiculous pantomime of accessories has been added (Bates, 1920; Corbett, 1930; Ross and Rehner, 1943; and many others). The best and most readable is that of Aldous Huxley (1942-43).

"In all these systems the fundamental concept is sound—that visual interpretation can be improved and strain eased by repetitive exercises alternating with periods of relaxation. The childish and somewhat undignified accompaniments of palming (covering the closed eyes with the palms of the hands and imagining a beautiful scene), butterfly blinks, re-

laxed breathing, sunning ('letting go and thinking looseness' and turning the eyes to the sun), swinging (rhythmic swaying of the body to make the mind 'friendly to movement' and 'soothe' it 'as do the movements of the cradle'), nose-writing (writing with an imaginary pencil conceived to be attached to the nose), flashing with dominoes, shifting, rubbing and kneading the upper part of the nape of the neck and a host of other procedures, are in the main innocuous if there is nothing else to do with time, and add sufficient mystery to make effective therapeutics to the psychopath. To this type of patient such treatment is as valuable as any other autosuggestive system of Yogi or Coué-ism. The foundation of its popularity lies in the possibility of doing away with the abhorrent 'crutch' of spectacles; its greater value in psychopathic states wherein a host of troubles are displaced to and fixated upon the eyes, is to reinstate visual self-confidence in a person emotionally insecure; its danger lies in the acceptance by the credulous of its infallibility in the cure of all ills to the exclusion of any other—and possibly very necessary—methods of therapeutics."

TONOMETERS NEED WATCHING

Careful checking of tonometers is necessary, to judge from a report by R. O. Gulden, a manufacturer of ophthalmic instruments, in *Guildcraft* of December 1958. In the two years ending August 1, 1958 he serviced 1,087 tonometers. He found that 411 conformed to the standards, 626 needed correction, and 50 were rejected as useless.

The Sight-Saving Review

Newborn Still Need Protection

IS PROPHYLAXIS for ophthalmia neonatorum (ON) really necessary? Have not the new sulfonamides and antibiotics made it superfluous to instill one per cent silver nitrate in the eyes of newborn babies? Section 104 of the Sanitary Code of New York City, which made this procedure mandatory, was repealed in December, 1956 as an obsolescent law about a vanishing disease.

At the Columbia-Presbyterian Medical Center there had been only 10 cases of gonorrheal ON in 75,775 live births during the preceding 25 years, and none had been seen since 1948. All this time the silver nitrate procedure had been faithfully observed. In April, 1957 it was discontinued at the center's Sloane Hospital for Women.

What happened in the next few months was described by Drs. Gilbert W. Mellin and Mary P. Kent during the Spring 1958 session of the American Academy of Pediatrics. Their paper, published in *Pediatrics* the following November, tells a dramatic story.

When prophylaxis was dropped they began a period of vigilant surveillance, with support from the Public Health Service. The nurses in five ward nurseries and one semi-private nursery were instructed to report all discharging eyes in the newborn, even the mild reactions called "sticky eyes." Of 1,974 infants observed from April to October, 64 had discharging eyes, an incidence of 3.2 per cent. Cultures were promptly made of these discharges, and in 19 instances control cultures were obtained from a non-

discharging eye of another child in the same nursery.

There was no marked difference in the cultures from the discharging eyes and the controls, with one important exception. Four of the babies with discharging eyes had positive cultures for *Neisseria gonorrhoeae*, and developed severe ON. All infected eyes were given various types of treatment, from saline washes to penicillin and chloramphenicol for the ON cases, and all responded quickly.

Drs. Mellin and Kent made a series of studies during the period of non-prophylaxis. They found no apparent correlation between the infant's weight and eye infections. What was important was the date of appearance of ON. In two of the cases the first symptoms were observed on the second post-partum day. The third was discharged on the fourth day and developed the symptoms at home; the fourth patient was eight days old before even minor symptoms appeared. Belated development of ON has been reported by other pediatricians. At Sloane the ward patients are discharged on the fifth post-partum day and sometimes earlier. Thus any incidence of tardy ON could not be checked accurately.

The fact that some cases of ON clear up without medication, and that the others respond quickly to antibiotics or sulfonamides, probably conceals the real incidence of ON, in the opinion of these authors. Nor is it possible to say what percentage of infants with ON suffer permanent damage. They report that none of the cases at

Sloane since 1932 has resulted disastrously.

Another important finding by these pediatricians is the fact that in the four cases of ON in 1957 none of the mothers was suspected of having gonorrhea. They cite studies made late in pregnancy "which indicate latent maternal infections in the range of 2 to 3 per cent. Effective modern treatment has not eradicated gonorrheal infections." Thus, unrecognized maternal infections, unrecognized cases of ON, and lack of accurate checks on the real incidence of venereal disease in a great city cloud the picture.

The Columbia-Presbyterian Medical Center, which had reduced the incidence of ON to 0.013 per cent under a protective regime, and then seen it mount to 0.2 per cent in a little over six months, made an important change on October 25. The authors end their report:

"Prophylaxis for gonorrheal ophthalmia has been reinstituted in this Medical Center."

PROBLEMS OF PREMATURES

At a practitioners' conference held at the New York Hospital-Cornell Center and reported in *New York Medicine* of January 5, 1959, several professors of pediatrics discussed the problems of newborn babies, especially those prematurely born. There was considerable emphasis on the prevention of retrolental fibroplasia (RLF) by withholding supplementary oxygen from premature infants.

"Oxygen administration is not essential to the survival of the babies," said Dr. Mary Allen Engle of Cornell University Medical College. "I think

most pediatricians now believe that oxygen should not be administered to prematurely born infants unless there is a clear indication for its use, such as cyanosis which is persistent and is relieved by oxygen. The oxygen is withdrawn as quickly as possible if it is given.

"Most pediatricians four years ago would have been startled to hear that a 1,100 gram baby did all right in an incubator without the addition of extra oxygen. Actually most of them do well without it."

WONDER DRUG, OLD STYLE

The small herb called eyebright was once the panacea for eye ailments, says E. C. Scott in *The Optician* (London) of October 31, 1958. Its virtues were extolled in a seventeenth-century book, *The English Physitian*, by Michael Culpepper, "Gent Student in Physick and Astrology."

"If this herb were but as much used as it is neglected it would half spoil the Spectacle Makers trade," Culpepper wrote. "The Juyce or distilled water of Eye Bright taken inwardly in White wine or Broth, or dropped into the eyes for divers days together, helpeth all infirmities of the Eyes that cause dimness of Sight . . . it also helpeth a weak Brain or Memory. . . . Faith, it hath restored sight to them that have been blind a long time before."

The continuity of English life is such that eyebright is still sold by herbalists. J. and A. Churchill, who published Culpepper in 1695, still specialize in medical books, including many by distinguished ophthalmologists who no longer claim a knowledge of astrology.

The Sight-Saving Review

International Medical Research

AS PART of their efforts for the conquest of disease the National Institutes of Health maintain a scientific interchange with other nations, and support a number of foreign research projects. A background report on this program has been prepared by the Institutes for the Senate Committee on Government Operations, which was authorized in August, 1958 to make a complete study of international health, research, rehabilitation and assistance programs.

In a section describing the significance of foreign contributions to neurology several ophthalmologists are mentioned. In 1911 Allvar Gullstrand of Sweden was awarded the Nobel Prize for his work on the dioptrics of the eye. He did notable work on the lens, and devised the first reflex-free ophthalmoscope. Among present studies are those of Dr. Jules François of Belgium on intraocular pressure, chemistry of the lens, and retinal function in health and disease. Professor H. K. Müller of Germany is also working on lens chemistry, and another German, Dr. G. Meyer-Schwickerath, has developed the use of powerful light in treating retinal detachment. In England the studies carried on at the Institute of Ophthalmology under the direction of Sir Stewart Duke-Elder, and the researches of W. A. Rushton in the pathology of color vision are cited.

During the fiscal year of 1958 the National Institutes of Health spent nearly \$3,620,000 in international activities, chiefly in 96 grants to foreign research projects, and in the interchange of personnel. About a hundred

foreign scientists were invited to use the laboratory and clinical resources of the Institutes, and research fellowships and traineeships were given 86 Americans for study abroad and 17 foreign researchers for study in the United States.

WHO to Expand Program

A sweeping program for international medical research was endorsed by the executive board of the World Health Organization, meeting in Geneva January 23. The program was developed by the World Health Assembly during its sessions in Minneapolis last May and June.

At the Assembly Mrs. Leslie Gray, executive secretary of the Minnesota Society for Prevention of Blindness, was the official representative of NSPB and the International Association for Prevention of Blindness. She also acted as hostess at a reception given by the voluntary health agencies.

In describing the research plans, WHO Director-General M. G. Candau defined six categories of study particularly suitable for international collaboration. First are such broad problems as the genetic description of populations and the incidence and prevalence of disease. Second are communicable diseases, which need a regional approach. The third category includes such diseases as cancer and diabetes mellitus, for which comparisons between different regions may yield valuable clues to understanding. In the same way, study of a rare condition often has unexpected practical importance, and such investigations form a fourth area for research.

Two general categories follow: the need to assist highly skilled research workers to pool their experience; and the need for international cooperation because research resources are lacking in the countries where problems are found. Assistance from other nations in manpower and facilities could be arranged through WHO.

POSTGRADUATE COURSES

The Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, will offer the following courses this spring:

Ocular Surgery, May 18-23, 1959. This will include cataracts, glaucoma, keratectomies and keratoplasties, pterygium, lacrimal sac, retinal detachment, muscles including ptosis, enucleation and evisceration, and orbitotomy. Registration is limited and preference will be given ophthalmologists taking the entire course. If places are available, doctors may register for parts.

Histopathology of the Eye, May 18-23, 1959. Limited registration.

Ophthalmic Plastic Surgery, April 23-May 15, 1959. Limited registration.

Review Course covering Practical Aspects in Perimetry, May 20-22, 1959.

Further information may be obtained from Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, 218 Second Avenue, New York 3, N. Y.

FELLOWSHIPS OFFERED

The Guild of Prescription Opticians, which maintains 18 fellowships for residents in ophthalmology, announces that awards for six three-year residencies are now open. Each fellowship is for a total of \$1,800, payable in monthly stipends over the three-year period. Applications must be received by May 15, 1959. Information may be obtained by writing to Fellowships, Guild of Prescription Opticians of America, 110 East 23rd Street, New York 10, N. Y.

MANUEL TRONCOSO, M.D.

Dr. Manuel Uribe Troncoso, inventor of the gonioscope and one of the great pioneers of modern ophthalmology, died in New York City on January 21 at the age of 91. A native of Toluca, Mexico, Dr. Troncoso settled in New York City in 1916 as professor of ophthalmology at the Post-Graduate Medical School and Hospital. In 1932 he joined the Eye Institute of the College of Physicians and Surgeons, Columbia University, as researcher and later became assistant clinical professor of ophthalmology. Besides writing more than 200 papers on his specialty, Dr. Troncoso was author of "Internal Diseases of the Eye and Atlas of Ophthalmology," which has gone through many editions since its first publication in 1937.

Dr. Troncoso was a consultant of the National Society for the Prevention of Blindness from 1942 until the time of his death.

ARREST ON FRAUD CHARGES

Iddien Reece Conner, accused of impersonating an eye specialist for 20 years, has been arrested in Missouri on five fraud charges, reports *AMA News* of February 9. Police said he had charged people from \$3.75 to \$1,297.50 in Osage County, Mo. The officers said Conner had warrants pending against him in at least 20 other cities and towns.

Conner's usual method of operation, according to police, is to tell a patient that cataracts are developing. He then puts his own "radium water" in their eyes, covers the eyes with a bandage containing a piece of membrane from an eggshell.

Upon removing the bandage, he will show the patient the egg membrane, describing it as the offending cataract. He will then collect his fees.

News of Glaucoma Screening

A FREE testing center for glaucoma is maintained at St. Luke Hospital, Pasadena, California, with the cooperation of the Altadena Lions Club. The clinic, under the supervision of the hospital's ophthalmology section, is held Thursday afternoons, and now tests over a thousand persons annually.

An interesting pattern in the incidence of glaucoma by age and sex is revealed in an analysis of the center's 1957 findings made by the State Department of Public Health. For the 1,174 persons screened the overall incidence was 2.3 per cent, with 309 men showing a percentage of 1.9 as against 2.4 for 865 women. However, between the ages of 45 and 65 men had a higher rate than women. After the age of 65 the incidence in women was 3.8 per cent.

Fort Lee Project

As part of its community service program the Lions Club of Fort Lee, New Jersey, recently sponsored a two-day glaucoma screening project in which the New Jersey Commission for the Blind cooperated. The Commission's mobile eye unit, its regular staff augmented by local health board nurses, visited Fort Lee for the two-day period. Mrs. Emma Howe, supervisor of prevention services of the Commission, served as director of the project. Nearly 300 persons were screened, of whom about two per cent were suspected glaucoma cases. The National Society's pamphlet on glaucoma and other educational material on eye care were distributed during the testing periods.

John H. Carskadon, chairman of the Lions Club sight conservation committee, who originated the project, reports that it aroused a great deal of interest and that people came from many nearby towns for the test although it was designed only for Fort Lee residents. Some had to be turned away, in spite of the fact that the testing periods were extended each day to accommodate as many persons as possible. Mr. Carskadon feels that the project, the first of this type in New Jersey, was well worth while, that it should be repeated, and that the idea of using the mobile eye unit is thoroughly practical.

G-Day in Montana

The first glaucoma survey in western Montana was held in Missoula on May 24, 1958, under the sponsorship of the Delta Gamma Alumni Society of Montana State University. The local ophthalmologists and the National Society for the Prevention of Blindness cooperated in the project. Of the 301 persons who reported at the clinic for screening six glaucoma cases were found, three of them not previously diagnosed. It is planned to hold these surveys yearly.

Exhibit on Loan

Any county medical or ophthalmological society wishing to borrow a glaucoma exhibit may apply to the Eye Section of the San Mateo County Medical Society, San Mateo, California. This invitation is extended by Rodney E. Abernethy, M.D. on behalf of the Society in an article in the November 1958 *Guildcraft*, describing

the booth labeled "Glaucoma the Thief of Sight" which attracted considerable interest at a recent county fair.

Ophthalmologists of the Eye Section designed a series of posters telling the story of glaucoma, which they set up in a space ten feet square. In one corner the NSPB film, "Hold Back the Night", was shown continuously, and local ophthalmologists and helpers were on hand to answer questions and distribute the NSPB pamphlet on glaucoma. The physicians who sponsored this exhibit financed it themselves, and offer it to fellow societies with no charge except for shipping.

DOCTORS RECOMMEND SAFEGUARDS

Resolutions dealing with eye safeguards were passed at the annual meeting of the Pennsylvania Academy of Ophthalmology and Otolaryngology in May, 1958. One endorsed the principle of giving infants a medical eye examination with cycloplegics by the age of six months, when the child is more easily handled than at one year of age. This would permit early detection of anisometropia, extreme hyperopia, and congenital ocular disease, and in many cases prevent amblyopia and the development of muscle imbalances.

Another resolution was inspired by reports to the Academy's committee on conservation of vision that keratitis, corneal ulcers and other pathology had been caused by improper fitting of contact lenses. The resolution stated that pathological cases resulting from contact lenses should be reported to the Academy committee, that ophthalmologists should con-

tinue and improve the technique of fitting these lenses, and also continue "the training and careful supervision of ancillary workers in this field."

Excerpts from the minutes of the meeting were published in the Fall 1958 *Transactions* of the Academy.

SEEING HABITS FOR DRIVERS

A five-step formula for training drivers to use their eyes properly is described by Edwin Weber in the American Medical Association's *Today's Health* for February 1959. This method, when used by large trucking firms, has cut an already low accident record in half, Mr. Weber says.

The training method was developed by Harold L. Smith, a driver training specialist, in collaboration with J. J. Cummings, an expert in industrial transportation, and R. A. Sherman, an occupational vision authority. The principle of the formula is to develop seeing habits which ignore unimportant details and automatically note the essential ones. This means the proper use of the three-degree cone of central acute vision and of fringe or peripheral vision. The five steps in training follow:

1. Use fringe vision to steer. To overcome the errors due to sitting left of center, use your fringe vision to watch the center of the lane about 200 feet ahead, and your central vision to check traffic near you. At night, aim the fringe vision beyond the area illuminated by your headlights, using their "spillover" light to see signs and hazard markers. This high-aim habit helps control speed so that you can stop if necessary within a safe distance.

2. Get the big-picture habit. Instead of concentrating your gaze on

the nearest car, get the general picture of the traffic scene a block ahead in town or half a mile on the highway. This gives you instant warning of sudden changes ahead.

3. Force your eyes to move every two seconds. Tests show that you cannot concentrate on a target longer than 1.7 seconds. Driving with a fixed stare dulls vision and brain. Keeping the eyes in motion rests them, and forces you to adjust your speed to the situation.

4. Keep a space cushion around your car. Getting hemmed in causes tension and sudden impulsive moves.

5. Be sure the other drivers see you, particularly in heavy traffic. Many drivers fail to check side and rear; make them aware of you by tapping your horn or flicking your lights.

After about two months of practice, the author says, even seasoned drivers profit by the habits of getting the big picture, keeping the eyes moving instead of in a hypnotic stare, and alerting other drivers. And in an emergency these practiced reactions are lifesavers.

Visual Fields and Traffic Safety

A thorough study of the relation of fields of vision to safety in driving, made by Ralph W. Danielson, M.D., is reported in *Traffic Safety* for September 1958. His conclusions are based on experience in testing applicants for motor vehicle licenses in Colorado, on a review of the literature, and on answers to various questionnaires.

The visual factor in traffic safety appears to be slight. At a rough estimate, about 0.3 per cent of the na-

tion's accidents can be traced to "poor eyesight." How many of these are due to defective fields it is impossible to guess. Paradoxically, Dr. Danielson remarks, there would be fewer accidents if everybody had poor visual acuity and narrow fields and drove accordingly, particularly in regard to speed. "It is the liberties and habits of driving permitted by good vision that kill us."

Since visual acuity drops off sharply even a few degrees from the macula, the quality of the central field is more important than the quantity of the peripheral field. Practically speaking, the field of vision may be increased by movements of the eyes, head and body. By the use of mirrors central vision can be used to advantage, so that even the one-eyed driver can see well enough to drive safely. The intelligent person can learn to compensate for handicaps such as monocular vision, hemianopsia, aphakia, or a variety of conditions—so long as central vision is good. Most motor vehicle departments have the policy of helping people with visual handicaps so that they can be safe drivers, instead of refusing them a license.

However, a full field of vision is desirable. Any applicant for a license who has a consistent loss of a portion of his central field, or a constriction of the peripheral field to 50 degrees in any direction, should be referred to an ophthalmologist for a diagnosis and opinion, and should be re-examined every year. Tests for fields of vision should be given to accident repeaters, those with borderline or poor visual acuity, and persons with suspected visual or other physical defects. The best screening apparatus is the Harrington-Flocks multiple pattern test.

Fields of Work for the Partially Seeing

ALPHA O. FENNEFOS

Teacher of the Partially Seeing
Public Schools, Oakland, California

An Oakland survey of the vocational status of former high school students indicates that they have a fairly wide choice of occupation and that few have been rejected by employers because of visual handicaps.*

AFTER high school, what?" That is the question often asked the teachers in special education who work with handicapped children; the question which led to a recent survey of the vocational status of former students of the Oakland Public Schools who had been in the program for the partially seeing. In the 20 years that this program has been in operation, no previous survey had been made.

The integrated plan for educating the partially seeing was started in Oakland in 1938 with one trained teacher giving special service to 12 students. During the last 10 years two additional special teachers have been employed to work with approximately 100 partially seeing students enrolled in classes from kindergarten through high school. These students are registered in the regular classroom and participate as completely as possible in the experiences offered all students. They have a traveling special teacher who provides instruction and materials and confers with regular teachers in relation to the limited vision.

*Based on a Master's Degree thesis, "A Survey of the Vocations of Former Students of the Oakland Public School Program for the Partially Sighted"; San Francisco State College, California, June 1958.

Since the special teachers go to the pupils, this plan provides service for partially seeing students who have other handicaps as well. Partially seeing children who are in special classes for the mentally retarded, deaf, or orthopedically handicapped get the same special service which is given in regular classes.¹

Habit and Personality Development

The scheduled time each week that the special teacher devotes to each child becomes not just a period for help in subject matter and typing. It is one in which she learns the child's need, emphasizes care of the eyes, and teaches good study habits. From the time the child first comes on the program, the special teacher serves as a counselor who helps the child realize how he can help himself. Frequent conferences with the regular teacher are vitally important. Stress is placed on personality development of the individual.

In education, a student cannot be segregated and important features of his developmental life omitted without personality problems arising. It must be remembered that the whole child is to be considered no matter what his "distinctive attributes" may be. The development of the structured

whole takes precedence over mere concern for his visual handicap. It shows lack of insight to put such stress on a physical handicap that the person develops a second handicap—a lame personality.²

This emphasis on the importance of personality traits is substantiated by a teacher who works with partially seeing junior and senior high school students in Tennessee. She states that:

These students do not succeed so much *in spite of* their disabilities as they succeed *because of* their abilities. These visually handicapped students are accepted (either poorly or well) by their normally-seeing schoolmates, not because of the degree of their visual acuity but because they have or do not have the same personality traits, social graces, and other characteristics that make *all* adolescents either well or poorly accepted by their schoolmates.³

Value of Team Work

Counseling, which is essential in any program of personality development, is a long-term process. It means assisting the student in establishing positive values and a philosophy by which he may live with himself as he is; it means convincing him of the significant worth of personality building and the importance of vocational planning.⁴

In Oakland the teacher of the partially seeing works as a member of a team with the school counselors, guidance department, and the department of occupational adjustment. She has personal contact with the student every week, perhaps over a period of years; she knows his abilities and interests and can assist in his planning.

Conditions of the Survey

To learn the present vocational status of the 63 partially seeing students who have been in Oakland's special program, telephone or personal

interviews were held with 36 who could be located in this area. Three who live at a distance answered a questionnaire which was sent to them; and information about 16 others was obtained from relatives or friends. Thus 55 (30 girls and 25 boys) of the 63 were accounted for.

The interviews or questionnaires included the following questions:

1. Have you had any special training or education since you finished high school?
2. How many different jobs have you had? Please describe.
3. When applying for a position did any employer refuse to hire you or question your ability because of your vision?
4. Did you get your job through a relative or friend, placement bureau, employment agency, personal application, or other?
5. Have you been unemployed? For how long?
6. Are you married? Have you any children?
7. What do you consider was the greatest benefit, if any, that you derived from being in the sight conservation program while attending school in Oakland?

Percentage of Graduates

Of the 55 students located, 85 per cent (28 girls and 19 boys) had graduated from high school. The two girls who did not graduate had handicaps in addition to their poor vision. One, cerebral palsied, is under vocational rehabilitation, and the other, mentally retarded, is in a sheltered workshop. Of the six boys who did not graduate, one is mentally retarded; three went on to continuation school.

Of the 47 high school graduates, 35 continued their education; 17 attended college and 18 vocational school. All had been gainfully employed, although two were out of work when interviewed. Analysis of the jobs they had held showed 60 different types of occupation. Office work was most popular with the girls, who held such jobs as secretary, typist, file clerk, cashier, transcriber, operator of business machines. Other occupations listed included medical assistant, office nurse, laboratory technician, sales girl, waitress and baby sitter. The boys mainly preferred manual work as mechanics in service stations and shops, machinists, and construction workers. Three were packers in factories.

Few of the students had entered the professions, although several of the girls had had such training. Three of them married soon after they finished college. One girl taught school two years before marriage. Of the students still in college one is planning to be a teacher and one an engineer.

Sixty per cent of the jobs were obtained by the students themselves by making direct personal application rather than seeking the help of a placement bureau, employment agency, friend or relative.

The students reported that very few employers considered the visual loss a handicap. Four stated that employers questioned their ability because of visual loss, and three said they felt that employers failed to hire them for this reason.

Benefits of School Program

When asked what they considered the greatest benefit derived from the school sight conservation program,

four said, "learning to type"; four others, "special materials and help in subject matter." The other responses revealed that, although the specific helps and materials were beneficial, guidance in developing proper mental attitudes, good work habits, and a pleasing personality were considered to be more important.

. . .

Summary

The findings of this survey are in agreement with those of previous studies. They indicate that few fields of work are entirely closed to persons with visual restrictions and that employers in general are willing to hire such persons. Educational advancement is possible in spite of the visual loss.

One can conclude that in any educational plan for these students counseling and guidance play an important part. It is recommended that, if teachers are to be trained adequately to work with the partially seeing, they should first have been successful classroom teachers. Experience at different levels is important in the integrated plan, since the special teacher works with students from kindergarten through high school. In addition to the general and educational psychology courses, more advanced study in psychology, including testing, is essential.

Although this survey indicates that the integrated plan has been successful in Oakland, there can be no conclusion that it is the only feasible one for educating these partially seeing children. The survey affords proof, however, that when this plan is supported by interested administration it does work successfully, providing the op-

portunity to attain the objectives of education in our American democracy.

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2. Fredericka Bertram. A Presentation of the Philosophy and Method of the Oakland Plan of Sight Conservation. Unpublished Master's Thesis, Mills College, Oakland, California, 1951. p. 18.
3. Amie L. Dennison. Partially Seeing Children Aren't So Different! *The Sight-Saving Review*, Vol. XXII, No. 4, Winter 1952. p. 209.
4. Bertram, op. cit., p. 43-45.

SCREENING IN BUTLER COUNTY

For the third year the program of pre-school vision screening in Butler County, Pennsylvania, has been a notable demonstration of community cooperation. This work is conducted by the county branch of the Pennsylvania Association for the Blind with the help of school officials and nurses, P.T.A.'s, doctors and parents.

The screening was conducted from February through July, 1958, and reached 2,439 children scheduled to enter first grade in September. This was 86 per cent of the expected entrants. Of those tested 395 failed to pass, and were referred for further evaluation by an eye specialist. Of those referred 83.5 per cent either received an eye examination or have arranged to obtain one.

As a result of the eye examinations 250 children are now receiving follow-up care; 196 of them were advised to wear glasses. The specialists recommended that 34 children be given special seating in the classroom; that five receive eye surgery and one be given special sight-saving materials.

SUMMER COURSES 1959

Six colleges and universities will be offering basic summer courses meeting the recommendations of the National Society for the Prevention of Blindness for the preparation of teachers and supervisors of partially seeing children in 1959. Detailed information can be obtained by writing the course directors.

Illinois State Normal University. June 15 through August 7, 1959. Dr. Harold R. Phelps, director, Division of Special Education, Illinois State Normal University, Normal.

George Peabody College for Teachers. June 8 through August 12, 1959. Dr. Lloyd M. Dunn, coordinator, Education for Exceptional Children, George Peabody College for Teachers, Nashville 5, Tennessee.

San Francisco State College. June 15 through July 31, 1959. Robert A. Bowers, assistant professor of education, San Francisco State College, 1600 Holloway Avenue, San Francisco 27, California.

Syracuse University. June 29 through August 7, 1959. Dr. William M. Cruickshank, director, Education of Exceptional Children, School of Education, Syracuse 10, N. Y.

University of Pittsburgh. June 23 through July 31, 1959. Dr. Jack W. Birch, director, Department of Special Education, University of Pittsburgh, School of Education, Pittsburgh, 13, Pennsylvania.

Wayne University. June 22 through August 1, 1959. Dr. John J. Lee, chairman, Department of Special Education and Vocational Rehabilitation, College of Education, Wayne State University, Detroit 2, Michigan.

NOTES AND COMMENT

• Two Firms Restrained

The Federal Trade Commission issued two consent orders in October, 1958 against concerns making safety glasses and contact lenses. The United States Safety Service Company of Kansas City, Mo. was ordered (Consent Order 7148) to stop using the Greek green cross in its advertising and stamped on its products. This emblem is the registered trademark of the National Safety Council, and its use by the company has misled purchasers into believing that the glasses were endorsed by the Council.

Fluidless Non-Tact Lenses, Inc. of New York City was ordered (Consent Order 7026) to stop misrepresenting the effectiveness and wearing comfort of its "Airflo" contact lenses. Among the 17 claims the FTC complaint called false are statements that the lenses would correct all defects of vision, and protect the eyes better than eyeglasses.

The consent orders do not constitute an admission by either company that it has violated the law.

• Faculty Shortage

Difficult problems involved in the creation of new and the expansion of existing medical schools are presented in a report on medical education in the *Journal of the American Medical Association* of November 15, 1958, page 1459. During the academic year 1957-58 there was a total of 619 budgeted unfilled full-time faculty positions in medical schools in the United States. Of this number nine were in ophthalmology, and 239 in the various departments of basic science.

The report points out that augmented numbers of competent teaching personnel will be an important factor in obtaining advanced educational levels in medicine and research.

• Safety Lenses Urged

California parents and teachers are alerted to the importance of shatter-proof glasses for children in a bulletin issued by the prevention of blindness project of the State Health Department. The bulletin was timed to reach school personnel during the start of the school year when teachers, nurses and administrators are counseling with parents about their children. They are urged to suggest that when children are given prescription glasses they should be of plastic or of hardened glass. Such lenses protect the child during play hours from accidents which might result in serious eye injuries or blindness.

• Oldsters' Insurance

The health needs of a growing population of aged persons received distinct emphasis at the December 4, 1958 meeting in Minneapolis of the House of Delegates of the American Medical Association. It adopted a report already endorsed by the Board of Trustees which urged that:

"... physicians everywhere expedite the development of an effective voluntary health insurance or prepayment program for the group over 65 with modest resources or low family income; that physicians agree to accept a level of compensation as full payment for medical service rendered to this group, which will permit the development of such insurance and

prepayment plans at a reduced premium rate."

Since many elderly persons need eye surgery and medical eye treatment this action by the AMA is considered significant. The preliminary report of the proceedings is published in the *Journal of the AMA* of December 20, 1958.

• Official Condemns Boxing

Boxing is legalized murder and should be abolished, Harold Barnes, a veteran ringside official, declares in an article in the *Saturday Evening Post* of October 25, 1958. "The frequency of retinal detachments and hemorrhages among fighters is appalling," he writes. "I would estimate that 10 per cent of the 'catchers' in boxing—the fellows who absorb unusual amounts of punishment—eventually suffer retinal detachments. Such detachments result in loss of vision in that eye."

Mr. Barnes writes that Pat Valentino, a former contender for the heavyweight title, had undergone eye surgery and was partially blind when he fought Ezzard Charles in 1949. Two months later, when he lost to Joe Louis, Valentino was completely blind in the right eye.

• Health Forum Popular

The public wants to hear about medicine from the medical profession, according to the co-chairmen of the Rochester, N. Y. Health Forum, which conducts a popular television program. In the December 13, 1958 issue of the *Journal of the American Medical Association*, these physicians describe the panel discussions sponsored by the forum. "One survey showed," they state, "that the tele-

vision program . . . had a greater audience than President Dwight D. Eisenhower at the height of his 1955 campaign."

• Dr. Wald Wins Award

Dr. George Wald of Harvard University has been awarded the 1959 Rumford Premium by the American Academy of Arts and Sciences. This award, established by the Academy 163 years ago, was given Professor Wald for "the perceptive studies through which he has illuminated the biochemical basis of vision." These studies have been concerned particularly with the chemical changes which take place in the rods and cones of the retina in adjusting to light and to darkness.

• Doctors and Welfare

State and county medical societies should take an active part in developing and operating programs for the care of needy patients, says the annual report of the American Medical Association's Committee on Indigent Care, submitted early in December 1958. For some years the committee has been studying typical community plans for dealing with this problem. The report states: "The Committee plans to gear its future activities to the needs of the various states, providing them with necessary information on laws and existing programs, advice, and consultation when requested."

A summary of the report appears in the *AMA Journal* of December 6, 1958.

• Blindness Study

The medical, psychological and social effects of blindness in children will be studied under a three-year

grant of \$156,000 from the Institute of Neurological Diseases and Blindness of the U. S. Public Health Service. The award was made to Dr. Jerome Cohen, associate professor of psychology at Northwestern University, Evanston, Illinois, who will be the principal investigator of the project.

• Los Angeles School Health

A feature of the health program in the public schools of Los Angeles is the provision of parent-teacher health centers which give medical services, especially to the children of low-income families. This is one of the few cities in the country where the school district operates eye treatment clinics.

Of its army of nearly half a million pupils 345,000 were examined by school physicians during the school year 1957-58, the annual report of the Auxiliary Services Division states. Defective vision was noted in 26,576 children, and eye diseases in 4,205. The teachers and school nurses report to the school physician all pupils with symptoms of eye troubles. He examines them, and refers to an eye and ear unit of specialists all needing further study. The child then goes to a specialist chosen by his family, or is referred to one of the seven health centers for free care, refraction and glasses. During the year there were 10,340 visits to the eye clinics, and 3,112 pairs of glasses were delivered to needy children. These health centers have proved so valuable that two more are under construction.

The specialists of the eye and ear unit recommend placement of visually handicapped children in special educational programs. There were 72 blind children and 138 partially seeing enrolled in the elementary classes last year.

Applicants for teaching positions are given medical examinations, and in the last report 38 of the 613 rejected had serious visual defects.

• Follow-up of Vision Defects

Students in the Cathedral High School of New York City and its five branches showed a 44 per cent incidence of poor visual acuity in tests conducted during the 1957-58 school year. Of the 3,612 students tested, 1,618 were below the standard of 20/40 or better vision in either or both eyes. The health service department of the schools plans to make a study of this condition and if possible to remedy it. Meanwhile, the excellent follow-up system managed to get all but 23 of the pupils found defective to clinics or private ophthalmologists for correction.

• Lions Promote Eye Bank

Members of Lions Clubs in the Roanoke area are asked to contribute five dollars and an eye donor pledge to advance the 1959 program of the Eye Bank and Sight Conservation Society of Virginia, supported by the Lions of the state. The bank, established in the Elbyrne G. Gill Eye and Ear Foundation, is an affiliate of the Eye-Bank for Sight Restoration of New York City, and now has pledges for 779 donor eyes. A research laboratory has recently been established at the Foundation for the study of corneal problems.

• Volunteers Help Screening

Well-trained volunteers are valuable in a school health program, says Miss Mary Askew, supervisor of the school vision screening work of the Illinois Society for the Prevention of Blindness. In the November *Journal*



A series of 12 one-half hour television programs dealing with eye health has been prepared by the Colorado Chapter, NSPB, in cooperation with the state Ophthalmological Society, the Guild Opticians, and the Denver Public Schools. Subjects covered include glaucoma, cataract, optics, corneal transplants and crossed eyes. Ten of the twelve programs were kinescoped and a plan to provide for broad circulation of these is under consideration. From left to right are Edward J. Swets, M.D., Ivan E. Hix, Jr., M.D., and moderator, Len Berman.

of Health—Physical Education—Recreation Miss Askew describes the program which has been conducted since 1949, and which now operates through 49 local joint committees. A state advisory committee sets testing standards and encourages professional cooperation with the school vision program. The Society's three field consultants give expert aid to community programs.

The Massachusetts Vision Test for visual acuity and muscle balance and a test for hyperopia are given school children yearly or at least every two years. Those failing the acuity test are retested, usually by the school nurse.

Over-referral runs about 10 per cent.

Volunteers are chosen carefully, and are trained by the Society consultants in two consecutive days in groups of not more than six persons. Not only do they save the time of the school nurse and the teacher, but they become loyal and enthusiastic leaders in their communities in efforts to raise the level of education and public health in general.

• POB in Florida

Sight restoration and prevention of blindness are important functions of the Florida Council for the Blind. The report for the fiscal year 1957-58 an-

nounces that sight was restored to 249 persons blinded by cataracts and other diseases. During the year eye examinations were given to 1,890 adults and 814 children. More than half the children were also given general physical examinations in order to check on their health problems.

Major eye surgery was given 435 adults and 161 children, involving a total of 3,240 days of hospitalization. Where necessary glasses or prostheses were furnished patients.

The medical and social services, directed by G. J. Emanuele, provide thousands of home visits and help to groups interested in the prevention of blindness, who are furnished literature and Snellen charts for testing vision.

WINGS

So brief a span of life they stay with me,
Only a few short years at most, and then

They travel in a world beyond my ken
Their world of wonder and of mystery!

How can I gird them for the coming day

Knowing so little of their future needs?

Uncomprehending where the path-way leads

How can I hope to point to them the way?

Let me not burden them with useless things

Of my experience they will not take!

Mine is the guerdon if I but awake
In them the consciousness that they have wings.

WINIFRED HATHAWAY



BUTTONS FOR PRESCHOOLERS

More than 35,000 youngsters throughout the country are now proudly wearing buttons of the above design, indicating that they have had preschool eye tests in the volunteer screening program sponsored by the National Society. The buttons help to emphasize the importance of early eye care, and are regarded by the small fry as a "reward" for having been tested.

The design and inscription are white on a red background. The finish is enamel and there is a safety fastener. Actual size is one-and-a-half inches in diameter.

The preschool vision screening projects are now under way in 24 states. Approximately 2,500 volunteers have been trained to do the testing. Among 22,000 children screened in one 12-month period 1,266 were referred for a thorough eye examination. Reports indicate that 89 per cent of those referred needed some kind of eye care.

SINGLE COPIES of the NSPB Catalogue of Publications are free on request (No. 32).

The Sight-Saving Review

AROUND THE WORLD

AUSTRALIA

Broad Research Plan. Many fields of study are opening up for the Ophthalmic Research Institute of Australia, founded in 1952. A paper by J. Bruce Hamilton, M.D. in the November 1958 *American Journal of Ophthalmology* describes the dynamic activity of the Institute in surveying problems peculiar to the fifth continent.

Though Australia can boast internationally known ophthalmologists such as Sir Norman Gregg, Professor Ida Mann, and Dr. Kate Campbell it has no chair of ophthalmology as yet in its medical schools. It is planned to establish two: one at Sydney University with the cooperation of the Research Institute, and another at Melbourne, where the recently established Lions International Research Unit is established in a university teaching hospital.

Dr. Hamilton, who has been one of the ophthalmologists conducting surveys in various parts of the vast Australian complex, foresees more work on pterygium and virus keratitis, on the zoonoses, scrub typhus, and Q fever. The Institute is sponsoring virologic studies of trachoma in areas already surveyed by Professor Mann. Dr. Hamilton describes industrial ophthalmology as an "untouched field" in which Australia should follow American methods. And finally, he points out the need of further studies on intrauterine and birth diseases, blood dyscrasias, and dietetics in their relation to ophthalmology.

Trachoma Survey in Australasia. Many misconceptions about trachoma in

Australasia were corrected in a government ophthalmic survey covering Western Australia, Papua and New Guinea. Dr. Ida Mann reports the findings in the Fall, 1958 issue of the *International Review of Trachoma*. More than 24,000 persons were examined, representing a wide variety of races, climates and living conditions.

The idea that Australasia is relatively free from trachoma was proved erroneous; the four areas studied had an overall incidence of 43 per cent. Incidence was found to have no relation to race, climate or nutrition, but a strong correlation with a low standard of hygiene. The severity of the disease, as measured by the rate of blindness, seemed to bear little relation to incidence. The Kimberleys, with 10 per cent of all trachoma cases ending in blindness, had an incidence of 42 per cent, while New Britain, with a blindness rate of 0.3, had an incidence of 78 per cent. The severity of cases in the Kimberleys probably correlated with the sharp irritating volcanic dust in the region; the only climatic factor observed as significant. In New Britain, New Ireland and nearby islands 85 per cent of the children from 10 to 20 were affected; twice the incidence of Western Australia.

NETHERLANDS

Accidents Mount in Building Industry. In the short space of eight years the number of accidents to eyes in the building industry has quadrupled, according to a report in *Cahiers des Comités de Prévention*, November-December 1958, a journal published in Paris and concerned with safety in

construction and public works. The Netherlands report includes eye accidents serious enough to require the attention of an ophthalmologist. In 1947 there was a total of 2,794 eye injuries, and the score steadily increased to 8,432 in 1955. The Dutch correspondent urges the use of safety goggles and helmets in construction work.

NEW ZEALAND

Polynesian Pattern. Problems peculiar to New Zealand are described by Dr. W. J. Hope-Robertson, a veteran ophthalmologist of Wellington, in the November 1958 *American Journal of Ophthalmology*. His paper, presented during the seventh congress of the Pan-Pacific Surgical Association held in Honolulu the previous November, was largely concerned with the eye health of the 150,000 Maoris in New Zealand. "I am sure there are ophthalmologic problems in the Polynesian triangle, the solution of which could be of inestimable value to the whole human race," he said.

The almost total immunity of the Maoris from glaucoma, uveitis and other eye ailments is a fact of great medical interest. Though many of them are afflicted by the white man's infections, venereal disease and tuberculosis, these seldom lead to uveitis and iridocyclitis.

Many northern Maoris, and Polynesians who have immigrated to New Zealand from other islands have an attenuated form of trachoma. The infectivity of the Polynesian trachoma is practically nil as far as the white man is concerned. The Maoris suffer extensively from cataract, perhaps because of today's longer life span and the shift from their traditional diet and manner of life.

RUSSIA

Segregation of Visually Handicapped. How Russia trains children with visual defects is described by Emily J. Klinkhart, director of development at the American Foundation for the Blind, in the December 1958 issue of *The New Outlook for the Blind*. The visually handicapped are not integrated into the regular schools, but are educated in about 50 schools for the blind or the partially seeing.

This branch of education is directed by the Institute of Defectology in Moscow. Miss Klinkhart found no blind people with white canes, guide dogs or artificial eyes. The schools have no talking books or large-type books, and depend on braille.

SOUTH KOREA

Preventive Program Needed. A survey of ophthalmic conditions in South Korea made by Dr. William J. Holmes is published in the *Journal of Social Ophthalmology* (Paris) for Summer, 1958. To serve the 23 million people in the country there are about a hundred trained ophthalmologists, half of them serving in the Armed Forces. The lack of eye specialists, of drugs, of service organizations and of industrial safeguards combines with the usual Asiatic health conditions to cause much preventable blindness. At least 80 per cent of the estimated 100,000 blind are needlessly so.

Ocular leprosy is a serious and neglected scourge. There are 14,000 known victims in the leprosaria, but guesses of the overall incidence run as high as 150,000. Dr. Holmes found that about 10 per cent of the patients had ocular involvements, most of them preventable by adequate sulfone therapy. No

prophylactic or therapeutic help is given these patients, and they are never admitted to the wards of the general hospitals. Dr. Holmes recommends that a measure like the Leprosy Prevention Law of Japan be introduced to insure the overall treatment of these patients.

Other leading causes of blindness are smallpox, measles, venereal diseases including ophthalmia neonatorum (for which no prophylaxis is obligatory), chronic conjunctivitis, trauma and cataracts.

Medical teaching, Dr. Holmes found, still follows Japanese methods of the 1930's. He urges that young medical students be stimulated to specialize in ophthalmology. The new drugs should be supplied to the medical profession, with full training in their uses and dangers; and they should be kept off the black market. A society for the prevention of blindness is greatly needed in South Korea. Education of the public through films should be effective, since the cartoon type of film is popular even with the village folk. Help to the medical schools, supplies of medical books and journals, and strong backing by international health agencies would do much to modernize the picture in South Korea.

TAIWAN (FORMOSA)

War on Trachoma. An intensive ten-year campaign to control trachoma will be completed by 1962, according to a report in the *Chronicle of the World Health Organization* of November 1958. The program is conducted by the Taiwan Government with technical advice from WHO, and equipment, supplies and transport provided by UNICEF.

A preliminary survey in 1952 showed that three-fourths of the school children in a sample area had trachoma or conjunctivitis and doubtful trachoma. The Taiwan Trachoma Control Center held three-day refresher courses for ophthalmologists from 12 provincial hospitals, and they trained and supervised the trachoma teams of one doctor and one nurse from each of the 365 health stations of the island.

Actual examination and treatment of the school children began in September 1954. Infected cases were treated twice a day with antibiotic ointment for at least a two months' period. In the lower grades the teachers applied the ointment, in the higher grades the children treated each other under teacher supervision.

The constantly expanding program now reaches more than two million children in school and is extending to 1½ million preschool children. Mass treatment of family contacts is continuing, and a special campaign will reach 140,000 aborigines, who are severely afflicted with a virulent form of trachoma. Nearly 500 medical teams and 30,000 schoolteachers are treating and giving health talks to the people of Taiwan.

WHO consultants Dr. Vincent Tabone and Professor Ida Mann have visited Taiwan to check on results of the campaign. Dr. Tabone noted that by late 1957 there were fewer trachoma cases than previously among new school entrants where the mass treatment of family contacts had been carried out.

Even in June 1956, when Professor Mann studied the situation, the campaign already showed encouraging results. A sample of 1,633 school children

from urban, rural, salt-producing and aboriginal areas showed the percentage of active cases before and after treatment:

	First group		Second group	
	Sept. 1954	June 1956	Sept. 1955	June 1956
Urban	77	10	62	15
Rural	59	14	38	9
Salt producing	66	28	69	32
Tribal	85	35	80	28

Effects of Atomic Flash

An atomic flash over 35 miles away may cause two separate eye conditions: flash blindness lasting about half an hour and chorioretinal burns, which leave permanent scotomata. In an article in *The Journal of the American Medical Association* of October 11, 1958 Victor A. Byrnes, M.D., discussed the bearing of these hazards on civil defense. Dr. Byrnes is director of professional services in the Office of the Surgeon General.

The blink reflex is not fast enough to protect the eye from either hazard, but with adequate warning civil defense personnel can patch at least one eye if the other is needed for observation.

Flash blindness is due to the bleaching of the retinal photosensitive chemicals by bright light. The eyes are temporarily incapacitated in darkness, but much less so in daylight. Effective filters to prevent flash blindness usually prevent the individual from doing anything useful. Defense personnel may therefore protect one eye for seeing during the emergency, while the blinded eye recovers.

Related chorioretinal burns are caused by the lens system of the eye forming an image of the fireball on the retina. The visible and near infrared light (400-1,250 millimicrons) energy is absorbed by the retinal and choroidal pigment. Pupillary size is an important factor in the seriousness of the burn, so that this is more of a night than a daytime hazard. Unless the image of the fireball is formed on the macular area the permanent effect will be binocular scotomata in the peripheral field which do not seriously impair vision. If macular, vision may be reduced to 20/200 (peripheral acuity). This lesion can occur outside the danger zone of any other atomic effect except fall-out. It is not painful, and requires no emergency treatment.

Civil defense personnel should be trained to understand these effects, and thus prevent panic.

NSPB RESEARCH GRANTS

The Research Committee of the National Society for the Prevention of Blindness invites requests for research grants in 1959. Funds are available for projects that may contribute to basic understanding of eye function and pathology, or that may improve methods of diagnosis, treatment or prevention of blinding eye disease. Grants will be made this spring for requests received prior to May 1. Inquiries may be addressed to the Society at 1790 Broadway, New York 19, N. Y.

THE DRUG COUNTER

Americans filling prescriptions last October spent about three per cent of their drug bill for eye preparations. General practitioners wrote 30 per cent of the prescriptions, and eye specialists the remainder.

New Medical Materia, Jan. 1959

The Sight-Saving Review

CURRENT ARTICLES

The Treatment of Retinoblastoma by X-Ray and Triethylene Melamine.

A. B. Reese, G. A. Hyman, N. duV. Tapley and A. W. Forrest. *A.M.A. Archives of Ophthalmology*, Vol. 60, p. 897. Nov. 1958.

Approximately a 90 per cent cure for retinoblastoma with a combination treatment of x-ray and triethylene melamine (TEM) given intramuscularly is reported. The two appear to have a synergistic or additive effect. From 1936 to 1952 the authors treated 195 cases by irradiation alone with an overall cure rate with vision of 36 per cent. Their policy is to choose cases in which the worse eye has been enucleated and useful vision may be salvaged in the less involved eye.

In January 1953 the authors began treating such cases with x-ray reduced to 3250 r in combination with TEM given orally. Of 20 eyes so treated 14 (70 per cent) still show tumor arrest, and vision is 20/30 to 20/20 in all but two children, in whom the lesion is directly in the macular area. In September 1955 the oral route was discarded and TEM was given by intra-carotid instillation. To date 17 of the 19 consecutive cases appear arrested.

Incidence of Retrolental Fibroplasia in Premature Infants with Controlled Oxygen Therapy. K. Campbell. *Transactions of the Ophthalmological Society of Australia*, Vol. 17, 1957, p. 81.

The author reviews the effect of controlled oxygen therapy in two Melbourne hospitals during the six years beginning in May 1951, when the

routine use of oxygen was discontinued. The Royal Women's Hospital and the Queen Victoria Hospital are both training schools for nurses, and the main difficulty in restricting oxygen therapy has been with new trainees and over-anxious nurses.

In the Royal Women's Hospital, where high oxygen therapy was given in the years 1945-1950, retrolental fibroplasia occurred in 23 of 123 babies (19 per cent); under controlled therapy one infant was affected out of 125 (0.8 per cent). A moderate regime had been followed in the Queen Victoria Hospital, where three out of 44 babies (7 per cent) were affected; under more careful control two out of 246 (0.8 per cent) had RLF.

Certain factors in preventing RLF are important from the medical standpoint. First is the prevention of cyanosis by obstetric and pediatric means to avoid, recognize and treat such common conditions as atelectasis and bronchopneumonia. Second, cyanosed infants are not necessarily hypoxemic. Sometimes they are plethoric, when oxygen therapy is dangerous. The third factor is the control of oxygen administration. The baby should be given as much as he needs, but not too much for too long. His color is the only criterion at present.

The amount of oxygen the baby needs depends on his breathing efficiency, and in cases of gross atelectasis he will die if he is not given enough. To find the minimum necessary for any case the rate of flow may be gradually reduced as guided by the infant's response.

Preventing Retrolental Fibroplasia. C. U. Letourneau. *Hospital Management*, Vol. 86, p. 47. Aug. 1958.

Hospital administrators should see that the recommendations of the American Academy of Pediatrics for the prevention of RLF are carried out. Haphazard methods of giving supplementary oxygen to premature infants are still observed throughout the country.

In one hospital a baby had been receiving oxygen for two weeks in an incubator with all ventilating ports tightly sealed. Doctor and nurse thought the low flow rate of one liter per minute insured an oxygen concentration of less than 40 per cent; actually the baby was getting 51 per cent. This same blunder of confusing flow rate with concentration was found in several hospitals. There is no guarantee that a particular flow will always produce a specific concentration. The author found hospitals where an oxygen analyzer was rarely used, or was not working properly. In some institutions analyses were made every hour, but the results were not entered on the patient's chart.

The hospital administrator should set up proper procedures for the use of oxygen, including an established routine for emergencies when the nurse must give a distressed infant oxygen before the doctor is at hand.

Retinal Hemorrhages in the Newborn. M. L. Kauffman. *American Journal of Ophthalmology*, Vol. 46, p. 658. Nov. 1958.

Continuing a study begun in 1931 the author reports findings in 10,925 newborn infants, of whom 18 per cent had retinal hemorrhages. While there is little evidence that these lesions re-

sult in harm to the eyes themselves, there is a general if indefinite relationship between retinal hemorrhages and intracranial trauma which might well be explored.

Hemorrhages vary greatly in size and appearance, and may occur anywhere in the fundus. Single flame-shaped lesions on or near the disk are most common, but multiple hemorrhages may cover most of the fundus. Factors which appear to be significant in the incidence of these lesions are toxemia of late pregnancy, the duration and severity of labor pains following rupture of the fetal membranes, and type of delivery. Incidence ran from about 15 per cent in normal multipara deliveries to 46 per cent in mid and high forceps deliveries. There was no relationship between eye involvement and head presentation during labor, and prematurity was not a factor.

Cataract Extraction under General Anesthesia. J. G. Moore. *British Journal of Ophthalmology*, Vol. 42, p. 723. Dec. 1958.

Appraising the use of general anesthesia in 172 cataract operations, the author concludes that it is satisfactory as far as the eye itself is concerned, but may have complications of a general nature. In the three London hospitals with which this surgeon is connected a standard technique of anesthesia with an endotracheal tube is used. Coughing and vomiting are minimal and do not endanger an adequately sutured wound.

The advantage of general anesthesia is that it allows the surgeon to obtain better and more uniform results without discomfort to the patient. In this series the visual results

corresponded to the average; there were six cases of iris prolapse, two of vitreous loss, one of retinal detachment and one hyphema. One eye was lost from infection, and another from a self-inflicted gross iris prolapse.

However, a full preoperative examination is necessary if general anesthesia is to be used with frail old people. In this series a woman aged 73 died of a coronary thrombosis on the 11th day after operation; another patient sustained a minor coronary thrombosis on the fifth post-operative day, and a third, with unsuspected myotonia dystrophica, failed to maintain spontaneous breathing.

Prevention of Angle-Closure Glaucoma. H. R. Hildreth. *American Journal of Ophthalmology*, Vol. 46, p. 600. Oct. 1958.

It is the duty of ophthalmologists to prevent angle-closure glaucoma by peripheral iridectomy in any eye that threatens to develop an acute attack of this sort. The preventive routine used by the author is to do a gonioscopic examination at the slitlamp in every case of shallow anterior chamber. Patients with extremely narrow angles are then given tonography. In a positive result (one case in five in the author's experience) the outflow is diminished by more than 25 per cent. A positive test, plus the narrow angle, indicates the danger of angle-closure glaucoma, and preventive surgery is then done. Narrow-angle eyes with a negative provocative test are carefully watched over the years.

While this procedure may seem far-fetched in persons who have never had an acute attack of glaucoma, it is preferable to a wait-and-see policy. Though Diamox and strong miotics

may bring an eye out of an acute attack, statistics show that they do not always prevent an eventual angle-closure glaucoma. The author condemns the continued use of Diamox in such cases. The severe acute attacks may be controlled but milder ones may occur, with increasing synechias and permanent impairment to outflow.

Since angle-closure glaucoma can be anticipated, eye surgeons should face up to the situation and never permit it to occur.

Glaucoma: Its Great Importance to Every Physician. L. L. Garner and F. H. Haessler. *Wisconsin Medical Journal*, Vol. 57, p. 447. Nov. 1958.

The danger of glaucoma is inadequately recognized by layman and physician alike, and this applies also to ophthalmologists. The measurement of intraocular tension should be made a part of every physical examination of patients over 40 years of age. In the Marquette University School of Medicine and a number of other medical schools the senior students are taught that the tonometry is an essential part of every physical examination, and they are required to measure the tension in every patient assigned to them on the medical wards of their teaching hospital. This should also be required of all interns. If tonometry were practiced by all physicians, the need for screening programs would be enormously reduced.

Congenital Toxoplasmosis: Chorioretinitis as the Only Manifestation of the Disease. J. R. Fair. *American Journal of Ophthalmology*, Vol. 46, p. 135. August 1958.

Chorioretinitis, often central and bilateral, is a constant finding in con-

genital toxoplasmosis, and in some cases may be the sole sign. The author first presents eight clinically certain cases of the disease which show considerable variation in signs such as convulsions, intracerebral calcifications, mental retardation, nystagmus and hydrocephalus, but all revealing a large healed chorioretinal scar. He then presents 21 other cases in which toxoplasmosis was certain or at least likely. In every case serologic tests of the mother were made if possible.

Toxoplasma gondii shows a predilection for nervous tissue. The organism is rarely isolated, and diagnosis depends on serologic and immunologic tests and on clinical signs. In lighter cases where there is little brain damage, many of the above signs may be absent—except for the tell-tale signs in the eyes. All children and adults with central chorioretinitis have significantly high dye test antibody titers, whether or not other signs are present.

This study was supported in part by a grant from the National Society for the Prevention of Blindness.

Changes in Ocular Motility after Scleral Resection. R. Weekers, J. Delville-Hacourt and M. Watillon. *Archives D'Ophtalmologie*, Vol. 18, p. 409. June 1958.

In 12 cases of scleral resection for detached retina, four developed diplopia. The sectioned muscle was paretic in two cases, and its homolateral antagonist was overactive; in the other two cases the reverse effect was noted. In one case the diplopia was transitory and was cured spontaneously. The second patient tends to suppress the image in the operated eye; the third patient is little disturbed by his diplopia, despite a clear

muscular disorder. Surgical intervention was used in the fourth case in an attempt to restore satisfactory motility.

Tenotomy and the reinsertion of the muscle in its tendon does not sufficiently explain the effects described. A comparative study shows that diathermy for retinal detachment very rarely results in diplopia, even when one or two muscles are cut. The authors believe that scleral resection is directly or indirectly responsible for diplopia.

Diabetic Neuropathy as a Cause of Extraocular Muscle Palsy. D. Snyder. *Transactions of the American Academy of Ophthalmology and Otolaryngology*, Vol. 62, p. 704. Sept.-Oct. 1958.

Diabetic neuropathy, a common but little understood complication of diabetes mellitus, may involve the optic nerve or any of the motor nerves to the extraocular muscles. Six cases of muscle paralysis apparently due to diabetic neuropathy are reported. Typically there was a rather sudden onset of diplopia, whose duration appeared to depend on the state of the diabetes. In a new case of diabetes the diplopia cleared up quickly; in a long-standing case temporarily out of control the muscle paralysis and diplopia persisted from four to six months.

The prognosis is good in these cases. Recovery may occur spontaneously independently of treatment, but such cases are rare and unexplained. Rigid control of the diabetes leads to disappearance of the symptoms. While diabetes is only one of several possible causes of extraocular muscular paralysis, it should be taken into consideration in making a diagnosis.

Inexpensive Visual Aid for Patients with Macular Degenerative Changes.

L. A. Breffleil. *Journal of the Louisiana State Medical Society*, Vol. 110, p. 428. Dec. 1958.

The yellow ophthalmic lens has proved helpful to elderly persons with subnormal vision due to macular degenerative changes. This tinted lens is not widely used, though it has been made in this country about as long as white crown glass, and is manufactured by two leading optical companies.

Ability to get about without assistance is a prime need of these patients, and the tinted lens improves their traveling vision. These lenses are available in single-vision or bifocal types, and the patient's prescription may be incorporated in the lens. The most widely used shade absorbs all the blue and violet rays as well as ultraviolet. It is not intended for glare absorption, but for contrast on murky or foggy days, when patients with macular changes have more difficulty than on sunny days.

Corneal Ulcers. D. G. Vaughan, Jr. *Survey of Ophthalmology*, Vol. 3, p. 203, June 1958.

The author stresses the importance of preventing corneal ulcers by using the most rigid precautions with eye solutions. Once the corneal epithelium has been breached by even a minor accident, the cornea is more susceptible to infection than the bloodstream, since it contains none of the defensive elements found in the blood, and is an excellent culture medium.

About a tenth of the blindness in the United States is caused by scarring or perforation due to corneal ulceration. An eye can be destroyed in 48 hours

by contaminated ophthalmic solutions instilled into the eyes by a physician; and such solutions, notably fluorescein, are found in doctors' offices, dispensaries, hospital surgeries, and other places where an injured eye is treated. The author emphasizes that there are no self-sterilizing eye solutions. *Pseudomonas aeruginosa*, which has a special predilection for the cornea, thrives in fluorescein solution, which can be protected only by daily autoclaving. The author strongly advocates the use of Kimura fluorescein papers moistened with sterile saline solution as a substitute.

Immediate identification of the organism in all bacterial ulcers is essential, since if pseudomonas is present, only prompt treatment with polymyxin can save the cornea. Ulcers due to fungi are increasing, and again contaminated eye solutions are often implicated. Other timely warnings counsel against patching bacterial or fungal ulcers, or using steroid therapy in viral ulcers.

Corneal Donor Selection by Blood Type. W. H. Havener, G. T. Stine and L. L. Weiss. *AMA Archives of Ophthalmology*, Vol. 60, p. 443. Sept. 1958.

Matching of donor and recipient by blood type may be important to the success of corneal grafts. The authors obtained information on the donor blood group in 21 of 80 recent cases, and found that all four ABO-incompatible cases resulted in late clouding of the graft, and that 14 of 17 ABO-compatible cases resulted in clear grafts. Of the total series of 80 transplants, in which the patients received corneas in turn from the waiting list, without regard to blood types, 44 were clear and 36 were cloudy.

Because of the prevalence of Type O blood, regarded as a "universal donor," it is calculated that simple chance would result in compatible transplants in two-thirds of all cases chosen at random.

Nelkin et al. have established that blood group A and B antigens are present in the human cornea, and A and B antibodies in the aqueous, these corresponding to the blood type of the given person.

In future transplants the authors plan to use only ABO-compatible donor material. They recommend that all surgeons performing keratoplasty record wherever possible information on blood type. If such information were sent to the blood banks and to their national committee, the blood group compatibility theory could be proved or disproved within a year.

Experimental Trachoma Produced by Cultured Virus. L. H. Collier, S. Duke-Elder and B. R. Jones. *British Journal of Ophthalmology*, Vol. 42, p. 705. Dec. 1958.

A great break-through in the battle against trachoma, which affects a quarter of the inhabitants of the globe, was the isolation of the trachoma virus (Collier and Sowa, 1958). The etiological role of the virus was demonstrated by its isolation from trachomatous patients, its serial passage through the yolk-sac of embryonate eggs in the laboratory, demonstration of its ability to reproduce the clinical picture of trachoma, and finally the re-isolation of the virus.

This demonstration required the help of human volunteers, and three lent themselves to the experiment. They were inoculated with trachoma

virus from Gambia, called the G 1 strain, in suspensions of the eighth egg passage. The virus was used in the left eye, and the right eye was swabbed with normal yolk-sac suspension as a control.

The results were conclusive only in the first volunteer, a man of 71 whose eyes had been enucleated following trauma some years before, who wore no prostheses, and whose sockets showed no inflammation before the experiment. He was inoculated March 11, 1958, and observed, untreated, for seven months. The right socket remained virtually unchanged, but the left developed the typical clinical and histological picture of trachoma, with the characteristic inclusion bodies. Conjunctival biopsies were studied histologically. The virus was recovered and isolated seven different times by yolk-sac inoculation. These results were good evidence of the etiological relation of the virus to trachoma.

The second volunteer, a man of 42, blind from bilateral congenital optic atrophy, with no external ocular disease, was inoculated three days after the first. He developed symptoms suggestive of a mild trachomatous infection, which disappeared by the 69th day. Attempts to isolate the virus were negative. Instability of the virus in eggs may account for these equivocal results.

The third case, a blind woman of 56, developed slight symptoms, but six days after inoculation she was inadvertently given penicillin after removal of a tooth, and the follicles in the left conjunctiva cleared up rapidly. While this experiment was not conclusive, the prompt clearing up of infection is interesting, in view of an accidental laboratory infection re-

ported by C. H. Smith in the same issue of the *Journal*. He was inoculating yolk sacs with a Chinese strain of trachoma virus when some of it spurted into his eye. The subsequent infection responded to penicillin.

Intra-Ocular Foreign Body. W. J. Levy. *British Journal of Ophthalmology*, Vol. 42, p. 610. Oct. 1958.

Out of 816 cases of intraocular foreign body admitted to Moorfields Eye Hospital in the years 1946-1955, 272 were followed up for a period of at least three years (average five). The chief causes of injury were a single tool, usually a hand hammer (91 cases); hammer and chisel (76) and iron fragments (65).

The anterior route of removal was used in 149 cases and the posterior in 52; the former proving to have more favorable results. In 19 eyes the foreign body was retained. Out of the entire 816 cases there were 52 enucleations. The overall results showed that 56 per cent of the eyes achieved a visual acuity of 6/18 or better. Six cases in ten recovered useful vision. Actually, this survey is weighted toward the pessimistic side, as patients with satisfactory results tend to be lost from a long-term follow-up.

Of the 220 eyes not enucleated, 94 were cataractous, 49 had a local opacity, and 77 were clear. It is noteworthy that a localized lens opacity tends to be stable. A third of the cataractous cases could have been cleared by surgery, but most of these patients were managing well enough with one good eye.

Those patients who retained the foreign body showed the same trend in long-term results as those who had had the foreign body removed. There

was one remarkable case of a patient who had a retained foreign body for 28 years, and despite a retinal detachment still enjoyed 6/6 vision.

Intense and early antibiotic therapy kept severe infections to a minimum, and there was no case of sympathetic ophthalmitis.

Topical Anesthetics for Eye Injuries. L. Christensen. *Northwest Medicine*, Vol. 56, p. 1457. Dec. 1957.

Because of toxicity to corneal epithelium, anesthetic ointments are unsafe for self medication in eye injuries. A case is described of a mechanic suffering ultra violet burn from a welding arc. His family physician give him an anesthetic ointment for use at home. He had to use more and more frequent instillations to control the pain, and within a few days was hospitalized with corneal ulcers. The ointment was discontinued and recovery was rapid, but his vision was permanently impaired and he had opacities deep within the stroma of both corneas.

The author comments that toxic agents damage the sensory nerve fibers and interfere with normal epithelial metabolism and the regeneration of cells. Loss of the protective epithelial barrier exposes the cornea to infection and the development of ulcers.

In such cases as ultra violet burn after prolonged exposure an extensive therapy is required, and anesthetic solutions are preferable to ointments. In a penetrating injury globules of ointment may be aspirated into the globe and act as foreign bodies, and on an abraded cornea they impair healing. Several anesthetic solutions are available in sterile containers and they are safe for prolonged use.

Eye Injuries in Children: A Serious Problem. U. M. Carbajal. *The Eye, Ear, Nose and Throat Monthly*, Vol. 37, p. 584. September 1958.

The author's series of 90 young patients in the Children's Hospital, Los Angeles, shows that children's eye injuries are often far more disastrous than is generally understood. In 19 cases enucleation or evisceration was necessary, and four others are slated for enucleation. In 26 cases vision was reduced to finger-counting, light-perception or total loss of vision; in 13 vision was 20/40 to 20/200; and in only 23 cases was vision 20/30 or better. Fourteen of the children with bare light perception may have phthisis bulbi and muscle imbalance.

As in other reports of this kind, boys predominate; there were 64 in the series. It is striking that the group most vulnerable to accident were three to four years old; 20 of these young children, who should have been under careful supervision, suffered eye injuries. The younger the child the greater was the risk of serious complications, in the author's experience. Children aged nine to ten were next in liability to accident, with 17 cases.

Cause of accident was a missile in 36 cases; explosives, 6; rocks, 6; BB shots, 5. Sharp or blunt blows caused 26 injuries; falling and stumbling, 15. A third of all injuries were penetrating wounds, and in 7 cases infections developed, leading to enucleation. There was hyphema in 48 cases, glaucoma in 23, cataract in 12, and phthisis bulbi in 11. Other complications were uveal prolapse, vitreous loss and iridodialysis.

The author urges an educational program for the prevention of eye injuries in children, with the outlaw-

ing of unsafe toys. Even more important is the prevention of complications by getting the child at once to a hospital for observation, even if there is no visible eye damage.

Needless Loss of Vision: Its Prevention. F. W. Law. *The Canadian Medical Association Journal*, Vol. 78, p. 1. January 1958.

In no branch of medicine is the superiority of prevention over cure more obvious than in ophthalmology. The author, senior ophthalmic surgeon of Guy's Hospital, London, mentions ophthalmia neonatorum and the curbing of retrolental fibroplasia as examples of the importance of prevention.

It is essential to watch the young child for any tendency to use one eye more than the other, because of the danger of amblyopia ex anopsia. The usual cause is a squint, which should be treated very early. If treatment leads to alternating squint, that is better than having one useless eye. Another cause, often overlooked, is a wide refractive difference between the eyes. A doctor or even a parent can detect such anisometropia by simple visual acuity tests; correction by glasses may well result in equal visual acuity.

A serious disease which responds well to early treatment is buphthalmia, or infantile glaucoma. Miotics are useless here, but modern surgical techniques prevent blindness in a high percentage of cases. As for chronic simple glaucoma, the individual must be aware of the possibility that he may have it, must look for signs like the frequent need for stronger glasses, and must have periodic competent eye examinations. Although cataract is not preventable, blindness from this cause is largely so.

Early treatment of a low-grade anterior uveitis and other inflammations may prevent loss of vision. Flickering in the peripheral field may herald an imminent detachment of the retina, and should receive attention. As for trauma, even the simplest injury requires protective care, and industrial workers should use every safeguard.

Amblyopia ex Anopsia: A Preliminary Report of the More Recent Methods of Treatment. S. Mayweg and H. H. Massie. *British Journal of Ophthalmology*, Vol. 42, p. 257. May 1958.

The authors report encouraging results in treating suppression amblyopia by the Cüppers after - image method. A series of 50 children between the ages of four and 13 were treated at the High Holborn Branch of Moorfields Eye Hospital, London. None of them had responded to occlusion of the fixing eye.

The instruments used—Visuscope, Euthyscope and Coordinator—were designed by C. Cüppers of Giessen, Germany. The first two are modified ophthalmoscopes. The Visuscope is used in diagnosis to indicate the type of fixation. Then the affected eye is occluded for three or four weeks, and when fixation is central or is approaching the fovea, occlusion is switched to the unaffected eye, and pleoptic exercises involving the coordination of hand, eye and brain are given. The Euthyscope projects a circular beam of light on the retina around the macula, which is not illuminated. This produces an after-image corresponding to the area of retina stimulated. The Coordinator, used in the later stages of the treatment, helps restore foveal fixation.

An average of 20 to 30 half-hour treatments was given. In the 12 children with central fixation, the visual acuity for distance was between 6/18 and 6/36 before treatment. Ten gained distance acuity of 6/12 or better, and two improved from 6/36 to 6/18. In near acuity, all 12 gained acuity of 6/12 or better. In the 38 patients with eccentric fixation, 26 developed central fixation, and eight central fixation with nystagmus. The starting acuity for distance ran from perception of hand movements to 6/18, and improved in all but four cases. In near vision, which throughout the series improved under treatment more than distance acuity, 29 of the 36 gained an acuity of 6/12 or better. Tables give the pertinent data for each of the 50 cases.

The fact that in 42 cases occlusion of the unaffected eye had been tried for an average of eight months with no measurable improvement in visual acuity is believed due to the fact that there was an undiagnosed eccentric fixation, which occlusion only made worse. The authors recommend that in any case of amblyopia the type of fixation should be diagnosed before treatment of any kind is started. They also urge that the treatment begin as soon as the child is old enough to cooperate, so that he will have the best possible acuity in both eyes at the earliest possible age. They believe that with adequate therapy the amblyopic eye will not return to eccentric fixation.

Changes in Visual Performance after Visual Work. J. Deese. Wright Air Development Center Technical Report 57-285.

The author, of Johns Hopkins University, reports a study made for the

Aero-Medical Laboratory on the effects of prolonged visual work. He contrasts two types of visual task and the deterioration resulting from each type. The first is the vigilance task such as radar monitoring, associated with monotony arising from a low signal rate and lack of change in the environment. The second is the active task such as reading a difficult text, involving continuous use of the oculomotor system and mental effort. Many duties in the Air Force or in civilian life of course include both sorts of visual work.

Experimental and field studies showed that vigilance tasks produced a reduction in visual sensitivity, usually within the first hour of work. This deterioration might not occur during any one session of work, but was related to lack of stimulation and variety. Sensitivity could be restored by an outside stimulus but the recovery was short-lived. In his recommendations the author suggests the use of monitoring with false signals at frequent intervals to keep the worker alerted.

Active tasks, on the other hand, may be continued for relatively long periods without deterioration of visual sensitivity, but do produce depression, headaches, feelings of fatigue and irritableness, and a general increase in somatic muscle tension. Any attempt at reducing fatigue in active visual tasks should be directed towards these factors. The major effects of difficult and active visual work are on the subjective feelings and the general bodily state, and these effects vary from one individual to the next and are complex in origin. Poor lighting, ocular difficulties, muscle strain, or excessive demands of the task may be involved.

Further studies may suggest changes of equipment and working conditions which would reduce the mental and somatic factors in visual fatigue.

Copies of this report may be obtained from the ASTIA Document Service Center, Knott Building, Dayton 2, Ohio.

Congenital and Familial Palpebral Ptosis and Ophthalmoplegia Externa in Five Generations. A. Garzino. *Rassegna Italiana d'Ottalmologia*, Vol. 26, p. 436. Nov.-Dec. 1957.

The author, assistant director of the ophthalmic clinic of the University of Turin, has brought up to date a genetic study of the Arnolfo family. Twenty-odd years ago Dr. G. Tirelli published a report of four generations in which ptosis and ophthalmoplegia appeared, and the author adds two cases in the fourth generation born after this report, and two others in the fifth generation. All four had bilateral ptosis, partial or complete paralysis of the extrinsic muscles, and strabismus. The family chart, starting with an affected father, shows 18 individuals inheriting the anomaly as a dominant trait.

Congenital ptosis and ophthalmoplegia externa are considered as separate clinical entities. There are cases of simple ptosis in which the only muscle involved is the levator palpebrae superioris; and on the other hand there are cases of congenital ophthalmoplegia in which this muscle functions perfectly. But most cases are of a mixed type, and are described by their most conspicuous feature.

While in simple ptosis the primary lesion is usually peripheral, in those with total paralysis of the extrinsic muscles the lesion involves the oculo-

motor nuclei (which may be atrophied) and a secondary hypotrophy of the ocular muscles. During surgery in two of the cases in the present study the author examined muscle fragments histologically. He demonstrated the presence in the rectus medialis of hypotrophied muscle fibers mixed with an abnormal quantity of connective tissue, while in the levator superioris there were no muscle fibers whatever. The first specimen was taken from a patient with total ophthalmoplegia, the second from a patient with paralysis of the rectus superior and simple paresis of the other muscles.

A New Look at the Definition of Blindness. R. E. Hoover. *The Optometric Weekly*, Vol. 49, p. 1227. July 3, 1958.

The author, instructor in ophthalmology at Johns Hopkins Hospital, believes there is need for a new definition of blindness, because of possibilities of confusion in the present approved standard. The committee of the American Medical Association, in drawing up the revised "appraisal of loss of visual efficiency," pointed out the lack of scientific studies relating visual deficiencies to the actual performance of various duties.

The need of such studies is apparent in establishing not only what "blindness" means, but also in defining various levels of subnormal vision. The success of the Industrial Home for the Blind in fitting low-vision persons with special lenses has opened up possibilities which alter the situation. Visual efficiency, visual acuity and visual versatility are not always as closely correlated as the usual methods of notation imply. To arrive at universal

standards beneficial and fair to all persons, medical and scientific studies are greatly needed.

Functional and Social Reeducation of the Visually Handicapped. H. Moutinho and J. dos Santos. *Revista Portuguesa de Oftalmologia Social*, Vol. 1, 1956-1957, p. 17.

In this first number of the organ of the Portuguese League for the Prevention of Blindness two of its editors review the problems of the visually handicapped. An estimated 12,000 blind and 150,000 partially seeing persons in Portugal challenge the ophthalmologist to play a social as well as a medical role. In eliminating the causes of blindness the physician, as the first to be consulted about visual disorders, can do much by early preventive measures such as correcting strabismus before vision is lost in the deviating eye.

In 1955 the League created the Vision Recovery Center, a combined school and orthoptic clinic for partially seeing children in Lisbon. The staff consists of an ophthalmologist, a psychotherapist, technician, school psychologist, teacher and social worker. Many of the methods used in Europe and the United States are followed.

Visual Acuity Tests for Near: Implications and Correlations. J. E. Lebensohn. *American Journal of Ophthalmology*, Vol. 45, p. 127. April 1958.

The author feels that insufficient study has been given to near acuity tests. He quotes Imus that the coefficient of reliability of the distance Snellen test is 0.97 and of near acuity is 0.78. Research is needed to make the near-vision test more accurate. The optimum testing distance should be

determined, and the best target. New instruments, the transilluminated near-vision chart devised by the author, and the Goldman panel, are discussed.

At best, he says, the standard school tests locate only 60 per cent of children needing corrective lenses. Most ophthalmologists consider a hyperopia over one diopter in need of correction. In many cases of reading failure hyperopia is a factor. In a study of high school students Taylor found 41 per cent of the good readers were hyperopic, and 67 per cent of the poor readers. Only three per cent of the reading failures were wearing glasses, while 15 per cent of the good readers had received corrective lenses.

An Evaluation of the Massachusetts Vision Screening Test and its Implication on the Genetic Theory of Myopia. R. S. Arner. *American Journal of Optometry*, Vol. 35, p. 470. September 1958.

A battery of vision tests was given to 1,079 grade school children of Air Force personnel at the Loring Air Force Base in Maine, and to 830 children in the nearby town of Limestone. The Massachusetts Vision Test was used, with an acuity standard of 20/20 with either eye. Plus lens and phoria tests were also given.

A significant difference was found between the children from the base and the town. In grades 1 to 8, 10 per cent of the base children wore spectacles as against 17 per cent of the Limestone group. Of the base children, 30 per cent failed a retest, against 36 per cent of the same age group in the Limestone schools. Children wearing spectacles had a higher failing rate than others: base, 45 per cent; Limestone, 58 per cent.

The author believes genetic factors may explain this difference since the Limestone people, of French origin, have been fairly isolated in their part of Aroostook County for two centuries.

The overall validity of referrals was about 85 per cent, with over-referral found mostly in the plus lens and vertical phoria tests. The author advocates use of the phoria test, however; and approves inclusion of teacher judgment to supplement the acuity test.

Multiple Screening for Eye Diseases. P. Levatin, M. Hayashida, N. B. Belloc and A. Weissman. *American Journal of Ophthalmology*, Vol. 46, p. 331. September 1958.

As part of a periodic health examination in the Kaiser Foundation Hospital, Oakland, California, 2,027 persons over 45 were given standard tests for distance and near visual acuity; near, peripheral and macular vision; color vision, and intraocular tension. Of the 275 persons referred for further examination 119 were found to have conditions other than refractive errors. From the standpoint of preventable blindness the only significant disease found was chronic simple glaucoma, confirmed in 18 cases, only three of which had previously been known.

Tonometry was the most effective method of finding glaucoma. The screening level was set high, at 30 mm. of mercury, and the median age of those examined was 54 years; these factors may account for the low percentage of 0.9 glaucoma cases in this series. The tonometer located 12 of the 15 new cases. Of the other three, two persons had tensions of 27 mm. and the third a tension of 29.5 mm. Ten of

these newly discovered cases were not revealed by any other test. The Harrington-Flocks multiple pattern field test found only four of the new cases; in all there was definite field loss. The authors conclude that the field test is relatively ineffective in detecting early cases of glaucoma.

Macular vision was checked with the Amsler Chart 1, which proved to be rapid and surprisingly efficient in detecting relative and absolute scotomas due to disease of the macula or optic nerve. This test found all 10 newly discovered central retinopathies, which were degenerative lesions or scars resulting from old chorioretinitis or macular hemorrhage, and were not amenable to treatment.

Of the 90 Negroes given tonometry, three had a positive diagnosis. The authors believe glaucoma attacks Negroes at a younger age than whites, and that they should be screened at an earlier age.

The Application of Ultrasonic Locating Techniques to Ophthalmology.

G. Baum and I. Greenwood. *AMA Archives of Ophthalmology*, Vol. 60, p. 263. August 1958.

The authors describe their ultrasonic method of visualizing the soft tissues of the eye and locating tumors and foreign bodies. Their high-frequency locator is essentially a slit lamp using pulsed sound waves instead of light. The reflected sound waves are picked up by a microphone, converted into electrical impulses, amplified and then converted into blobs of light on an oscilloscope. The resulting ultrasonograms represent horizontal sections through given levels of the eye, with detail equal to that of a low-power photomicrograph. Structures

opaque to light, such as sclera and posterior areas of the eye, are transparent to sound.

The commonest use of this method is in cases of corneal opacification, cataract, vitreous hemorrhage or exudate. A series of photographs shows how the sonic slit-lamp reveals what is hidden to the x-ray. Cases were chosen in which the eye was later enucleated, so that the ultrasonograms of serial tissue sections can be compared with pathological sections of the same areas. In one case there was corneal edema, hyphema, surgical aphakia, and a massive vitreous hemorrhage. The ultrasonogram demonstrated these findings, and also showed that the retina was wholly detached, forming a V containing the vitreous hemorrhage. Another demonstration was the visualization, despite a dense cataract, of a melanoma of the ciliary body.

The authors find that intraocular tumors at all depths may be visualized if they are larger than one mm. Tumors yield constant strong tissue echoes which may be traced by serial tomography to the site of origin or base of the tumor.

Foreign bodies give a much stronger echo than the surrounding tissues. A bit of wood inserted in the vitreous was readily distinguished, even in the presence of a vitreous hemorrhage.

Criteria for the differential diagnosis of retinal detachments, intraocular tumors and vitreous hemorrhages have been formulated, since their echoes are dissimilar.

The authors feel that their technique has many advantages over the x-ray, since it requires no contrast media or markers, and has shown no immediate or cumulative harmful effects. They regard the ultrasonograms

presented in this paper as the equivalents of the first x-rays, to be evaluated in that light.

Centrifugal Influence Upon the Electroretinogram. J. H. Jacobson and G. F. Gestring. *AMA Archives of Ophthalmology*, Vol. 60, p. 295. August 1958.

The existence of centrifugal fibers in the optic nerve, discussed by several authors, was indicated by experiments with mature cats and Java monkeys. The effect of certain drugs upon the electroretinogram (ERG) was abolished by optic nerve section. This finding suggests the hypothesis that there exists in the brain a center controlling retinal function. When stimulated by drugs or electricity, this center is believed to inhibit retinal activity; conversely, central nervous system depressants reduce the activity of this inhibitory center and thus increase retinal activity.

The ERG was found to decrease in amplitude following administration of pentylenetetrazol (Metrazol), hexamethonium, or electrical reticular stimulation. Section of the optic nerve eliminated the effects of these drugs, and increased the amplitude of the ERG, as did the administration of barbiturates.

In order to determine the possible role of neurohumors, cross perfusion experiments were set up with cats. When the reticular formation of one animal was stimulated, its ERG diminished immediately, while that of the recipient cat occurred about 40 seconds later. These experiments seemed to imply the existence of a slower-acting neurohumoral system acting on the cephalic center, the retina, or both.

The inhibitory brain center is con-

ceived as a type of feedback control which regulates the rate and intensity of retinal activity and controls dark adaptation. It is hoped to locate this center in future experiments.

This study was supported in part by a grant from the National Society for the Prevention of Blindness.

New Method of Determining Illumination Required for Tasks. C. L. Crouch. *Illuminating Engineering*, Vol. 53, p. 416. August 1958.

Recommended lighting levels needed for various seeing tasks have been established by eight years' work under the Research Institute of the Illuminating Engineering Society. The investigation was directed by Dr. Richard Blackwell of the University of Michigan, who used normal young observers to establish factors in seeing as related to light. The relationships of size, contrast, time and accuracy were measured at varying levels of brightness.

One factor, assimilations per second (APS) measures the number of pauses per second the unhurried eye makes in reading and other tasks. It was found that the eye can absorb from four to ten separate bits of information per second, with five APS taken as the norm.

After a battery of experiments, Dr. Blackwell was ready to analyze practical tasks. Various committees of the Society sent in 56 tasks representative of their fields (office, school, store, industrial and others). These were measured by Dr. Blackwell's staff with the help of several field engineers of the Society, and the optimum lighting for each task was established.

In school work samples of pencil writing with a No. 2 pencil on matte white paper required 63 footcandles.

Shorthand written with a No. 2 pencil needed 76 fc., and a blurred fourth carbon copy 133. In the garment industry, precision cutting guided by chalkmarks required a wide range of light, depending on the goods. Lighter patterns blending with the chalkmarks might need 266 footcandles. But to see a broken black thread on a spinner bobbin the textile mill worker needed 2,900 footcandles.

Following the report by Mr. Crouch are the recommendations and tables worked out by a special IES committee. In all locations involving visual tasks, the committee reports, levels of less than 30 footcandles do not appear desirable, since data on oculomotor functions suggest that for sharp vision adequate brightness is necessary.

The committee's long tables give the recommended lighting in footcandles for hundreds of tasks. For reading books and magazines, 30, for study and reading manuscript, 70.

Factors Influencing Clinical Evaluation of Drugs: With Special Reference to the Double-Blind Technique.

W. Modell and R. W. Houde. *Journal of the American Medical Association*, Vol. 167, p. 2,190. August 30, 1958.

In a report authorized by the AMA Council on Drugs, the authors discuss methods of making reliable studies of new drugs. In studying these preparations, what is called the "double-blind technique" is of undoubted value in eliminating the hopes and anxieties of the patient and the bias of the investigator. The drug under investigation and a placebo of identical appearance are given, with neither patient nor doctor knowing which is which. This is a sound technique, but it is not a complete method of evaluating a drug.

This method is no simpler or less rigorous than a formal experiment with a laboratory animal.

Factors which determine the sensitivity and reliability of a study are discussed: actions of the drug and the placebo, dosage, choice of subject, use of controls, collection of data, bias, and others. Unless these factors are weighed, improper conclusions may be drawn from studies using the double-blind technique. This should be used wherever feasible, but must be employed to deal only with bias and psychic factors which otherwise cannot be eliminated. When used in a poorly-designed experiment the double-blind control may prevent a false-positive interpretation, but it may also lead to a false-negative finding.

The complete method of clinical evaluation should incorporate a built-in sensitivity scale through the use of graded doses.

Seeing Times with Yellow Driving Glasses. J. B. Davey. *The Optician* (London) Vol. 136, p. 651. Jan. 2, 1959.

A preliminary experiment was made during a study of the effect of night-driving glasses on various visual functions. In noting the recovery time after a period of glare, four of the five subjects were slower when wearing yellow glasses, and taken together there was an increase of 12 per cent in recovery time with the tinted glasses. The second test recorded the time necessary to identify a target in the presence of glare. All five subjects were slower to see the target when wearing yellow glasses than without glasses, the mean increase in time being 29 per cent.

BOOKS AND PAMPHLETS

EMERGENCY WAR SURGERY. U. S. Armed Forces Issue of NATO Handbook prepared for use by the Medical Services of NATO Nations. U. S. Department of Defense. U. S. Government Printing Office, Washington, D. C. 1958. 411 p. \$2.25.

Although primarily intended for military use, this concise manual will undoubtedly be of equal value in civil defense and for general physicians who are called upon to care for injuries in civilian practice.

In the chapter on wounds and injuries of the eye there is emphasis on the general rule for non-specialists to follow: to refrain from interference in any injury of the eye that is not clearly minor. In the preliminary examination of an injured eye, after loose foreign matter has been flushed out with copious irrigation of plain water, there must be no pressure on the globe for fear of loss of its contents if there has been a laceration or perforation. There are warnings against the removal of an eye by a general surgeon unless the globe is completely disorganized or unless its removal is necessary as part of the general surgical management of an extensive wound to the face.

Physicians are reminded that sympathetic ophthalmia of the uninjured eye does not develop until at least 10 days after the injury and only exceptionally before 21 days. Therefore, there is an abundance of time for the patient to be seen by an ophthalmologist. Persons with a suspected penetrating injury should be taken to an ophthalmologist on a litter with both eyes bandaged and the head fixed in

position by rolls of towels or clothing. The patient should be warned not to strain. The writers recommend placing ophthalmologists as close as possible to the scene of casualties to assist in deciding which injuries are minor and can be handled at that point. Early use of chemotherapy and antibiotic therapy is recommended particularly for perforating injuries. Even if there are large numbers of eye casualties, conservatism is mandatory and determination of the need for enucleation should be the province of the ophthalmologist.

ABSTRACTS ON MILITARY AND AVIATION OPHTHALMOLOGY AND VISUAL SCIENCES. VOLS. III AND IV. Conrad Berens, M.D., L. Benjamin Sheppard, M.D. and John H. Bickerton, M.D., Editors. The Biological Sciences Foundation, Ltd., Washington 7, D. C. 1957. 466 p. and 509 p. \$20.00 a volume.

This series of volumes condensing the world's literature on military and aviation ophthalmology from 1800 to the present offers the widest panorama of the field so far available. Much of the material is of interest to the ophthalmologist in civil life, since it covers the immense amount of recent work in ocular research and clinical ophthalmology. The abstracts include not only the periodical literature but books, transcriptions of scientific meetings, and material from allied fields such as experimental psychology. Much material is unavailable elsewhere—source reports from military and aviation research centers, matter formerly classified, and some studies made in foreign countries.

The third volume covers the period from 1946 through 1948, and the fourth continues through 1951. While problems like acceleration-deceleration and space medicine are primarily connected with aviation, there are sections of general interest devoted to light sense, color vision, depth perception, visual acuity, injuries and their management, radiation, examination and therapeutics.

This master bibliography is a must for all medical libraries. Eye specialists and researchers in many fields will find it a mine of information.

GENERAL OPHTHALMOLOGY. Daniel Vaughan, M.D., Robert Cook, M.D. and Taylor Asbury, M.D. Lange Medical Publications, Los Altos, Calif. 1958. 328 p. \$4.50.

Three ophthalmologists, on the faculties of large medical schools, have produced "a concise yet reasonably complete, up-to-date review of a difficult specialty for use by medical students, general physicians, pediatricians, internists, and resident physicians in ophthalmology," as they express it.

Since this book will be widely used by the medical profession, it can be regarded as a valuable weapon in the prevention of blindness. The attitude of the authors is expressed in the section, "Preventive Ophthalmology," in which they point out the responsibility of non-specialists in preventing accidents to the eye and in recognizing diseases such as glaucoma early enough for effective treatment. Scattered all through the book are specific warnings against a drug or a procedure which the specialist has found dangerous to the eyes. There is a section on true emergencies, which must be

dealt with immediately, and urgent cases, in which days, rather than minutes or hours, can safely be allowed to pass before treatment is started. Another section lists cases which the general physician can handle, and those which should be referred to the ophthalmologist.

After a lucid presentation of the anatomy and development of the eye, there is a detailed chapter on examination of the eye by the general physician (which the authors hope will soon include tonometry in the age group over 40). The principles of management of the common ocular disorders are presented, followed by chapters on the eye structures and their pathologies, trauma, genetics, optics, and eye disorders associated with systemic diseases.

HIGHLIGHTS OF OPHTHALMOLOGY, 1957-1958. Benjamin F. Boyd, M.D. Panama, R.P., 1958. 281 p. Available from author, Box 1189, Panama, R.P.

Dr. Boyd, professor of ophthalmology at the University of Panama School of Medicine, follows an original plan in his *Highlights*, which he plans to publish annually. He summarizes several 1957 congresses and certain outstanding papers of the year, and includes personal interviews on specific problems with recognized authorities. Since the main emphasis of this collection is on surgery for retinal detachment, cataract and glaucoma the book has a unified character.

The 1957 meetings covered are the Pan-American Congress, the American Academy of Ophthalmology and Otolaryngology, the Chicago Ophthalmological Society, and the annual meeting on glaucoma sponsored by

the National Society for the Prevention of Blindness. Dr. Boyd includes a section on retinal detachment, with Drs. John M. McLean and A. E. Maumenee acting as consultants, and the editor undertaking a full digest of current procedures and problems.

THE EYE. E. Howard Bedrossian, M.D.
Charles C Thomas, Springfield, Ill.
1958. 340 p. \$11.00.

The author explains that he developed this book from a loose-leaf notebook he carried with him during teaching rounds and clinics. The first half is composed of epitomes of the basic sciences, intended to help those preparing for board examinations in ophthalmology. The clinical section is organized for quick reference by the practitioner, presenting the eye diseases grouped as external, inner and neurologic. A final chapter on ocular emergencies should be of value to hospital emergency wards. A practical book for rapid reference, this volume contains information which many doctors find difficult to remember, charts, indications for differential diagnosis, and a brief word about treatment.

A PSYCHIATRIST WORKS WITH BLINDNESS.
Louis S. Cholden, M.D. American
Foundation for the Blind, New
York, 1958. 119 p. \$1.85.

This book contains a few papers written by Dr. Cholden during a career as psychiatrist which was cut short by his death in an automobile accident. The counseling and rehabilitation of the blind are discussed, as are group therapy and the special problems of the adolescent and young adult facing a life without vision. Of special interest is a paper on the important role of the ophthalmologist

who must tell a patient that his case is hopeless. Dr. Cholden found that many physicians, for understandable reasons, could not bring themselves to tell such a patient the whole truth. However, Dr. Cholden felt this must be done, and no false hopes encouraged. The ophthalmologist, he said, should see his patient through the "period of mourning" for his lost sense, as the first necessary step toward a reshaping of his life.

LA MÉTHODE OPTOPSYCHOPÉDAGOGIQUE.

Dr. Gianfranco Carlevaro and Dr.
Honoré Ouillon. Editions Minerva
Medica, Turin. 1958. 146 p. 3,000
lire.

This book, written in French, is concerned with the detection of visual defects in the preschool child. It is a publication of the ophthalmologic clinic of the University of Turin, and combines the medical experience of Dr. Carlevaro and the educational experience of Dr. Ouillon, who is regional inspector of school and university health in France.

The system described here was perfected in nursery schools in Milan and Lyons, where it was used with children aged three to six years. The authors have devised a battery of "sensory games" which the youngsters accept as games, but which are said to measure the various visual functions with precision. To a limited extent some of the devices can be used to correct conditions such as strabismus and amblyopia ex anopsia. The authors emphasize that their system is chiefly for accurate appraisal of the child's visual functions and for checking his development of each function like distance acuity or depth perception.

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some fresh ideas in the text and the photographs, which show the French and Italian children playing the "vision games."

THE SOCIAL WELFARE FORUM, 1958. NATIONAL CONFERENCE ON SOCIAL WELFARE. Columbia University Press. 1958. 311 p. \$5.00.

"Accent on Prevention" was the theme of the 85th annual forum held by the National Conference on Social Welfare in Chicago, May 11-16, 1958. The papers selected for this volume reflect the changing trend toward the early recognition of the conditions leading to individual and family breakdown. Most of the authors devoted special attention to the strengthening of family life and to ways in which social work may contribute to family solidarity. The Conference

president, Eveline M. Burns, contributed a challenging paper in which she attacked what she called "professional myopia" among social workers who fail to see clearly the poverty, bad housing, and lack of follow-through in school health which they should be doing something to remedy.

PUBLIC HEALTH AND WELFARE: THE CITIZENS RESPONSIBILITY. SELECTED PAPERS OF HOMER FOLKS. Edited by Savel Zimand. The Macmillan Company, New York. 1958. 475 p. \$7.00.

The 49 papers in this volume span the period from 1893 to 1946, when Homer Folks headed the State Charities Aid Association in New York. The Association sponsors this book as a tribute to a great leader in the forces of social betterment. This devoted and far-sighted man, who was 92 in Feb-

ruary, exerted a profound influence on public health and welfare agencies. He was a pioneer in the fight against tuberculosis, mental illness and child neglect, to mention only three of his many crusades.

Running all through these papers is the theme of prevention. Mr. Folks felt that the best way to reduce human misery and dependence was the prevention of disease. In a paper read in 1909 he enunciated this principle, and half a century later the National Conference on Social Welfare chose as its 1958 theme: "Social Welfare—Accent on Prevention." The Folks papers, which compose a social history, trace the continuity of this theme. The National Society for the Prevention of Blindness, of which Homer Folks has long been an honorary vice-president, is one of many public health agencies which honor him as the elder statesman of human welfare.

PUBLIC PARTICIPATION IN MEDICAL SCREENING PROGRAMS. Godfrey M. Hochbaum. Public Health Service Publication No. 572. U. S. Government Printing Office, Washington, D. C. 1958. 23 p. 15 cents.

Under the sponsorship of the Public Health Education Services and the National Tuberculosis Association a study was made to find why people participate voluntarily in case-finding programs. The motives found in interviews with 1,201 persons in Boston, Cleveland and Detroit are also relevant to screening programs for other diseases.

The psychological state of readiness to obtain chest x-rays was made up of three main factors, appearing singly or in combination: a belief that the person might contract tuberculosis; that

he could not rely on symptoms as an index to his health; and that he would benefit from early detection of the disease. These motives are not powerful unless the person believes the possibilities apply to him as much as to others.

Situational influences also operated. Any changes in bodily functions which could indicate disease might send the person for a checkup. Stimulation from other individuals or groups was important, and people might come for x-rays in response to external influences alone. Mobilization of group resources may provide a powerful method of educating the public in the need for the early detection of disease.

DORLAND'S POCKET MEDICAL DICTIONARY. 20TH EDITION. W. B. Saunders Company, Philadelphia. 1959. \$4.50.

The new edition of this convenient abridgment of Dorland's Illustrated Medical Dictionary has been revised to keep pace with recent changes in medicine and the related sciences. Hundreds of new terms have been added, but the volume remains literally a pocket lexicon whose sturdy leather binding and legibility add to its utility.

HANDBOOK FOR TEACHERS AND ADMINISTRATORS OF VISUALLY HANDICAPPED CHILDREN. Edith Cohoe. Board of Education, Detroit, Michigan. 1958. 32 p. 70 cents.

All who are concerned with the education of visually handicapped children will find much of interest in this manual by the supervisor of classes for the blind and partially seeing in the Detroit public schools. It reflects a well-organized system which begins with home counseling services to the

family of a handicapped infant, and ends with vocational followup of graduates from senior high school.

Throughout, both blind and partially seeing children are integrated into normal school routine. This handbook outlines the procedures of the special rooms, the equipment necessary, and suggests teacher attitudes of proved value. Annual eye examinations of the partially seeing pupils are recommended.

Memorial Gifts

Flowers are a beautiful and expressive means of paying tribute to the dead. Many persons, however, prefer to choose a token which is more lasting and one which will benefit the living.

The National Society's memorial gift plan offers a means of honoring the dead in this way. A form is provided on which the sender indicates his gift:

"In memory of _____
I wish to contribute \$_____ to be used in conserving vision and preventing needless blindness. I shall appreciate your sending a memorial message to _____. The message is sent by mail or telegraph as desired, and the names of the deceased and the giver are inscribed in the Society's Book of Remembrance.

Contributions such as these are sometimes sent to the Society in recognition of happier events—such as a friend's birthday, Christmas, a wedding anniversary, or a recovery from illness.

Boxing Is Taboo

Every boxer who enters the ring risks loss of vision, Dr. Ernst Jokl of the University of Kentucky declares in a letter published recently in the *Journal of the American Medical Association*. He cites the case

histories of pugilists seen in his own practice, previously sound young men, with torn irises and choroids, macular ruin, retinal detachment and other damage.

"None of these injuries is accidental in the strict sense of the term," he writes. "They were deliberately produced, since blows to the face are the prescribed means used in boxing. . . . The medical view must be that boxing is taboo, since it is the aim of this 'sport' to assault the opponent and to disable him by inflicting serious injury. It is this fact that distinguishes boxing from such activities as track and field sports, tennis, swimming, games, weightlifting, and gymnastics."

Schoenberg Lecture

The twelfth annual Schoenberg Memorial program of the New York Society for Clinical Ophthalmology and the National Society for the Prevention of Blindness was presented on December 1, 1958 at the New York Academy of Medicine. Harold G. Scheie, M.D., professor of ophthalmology, University of Pennsylvania, was the lecturer on the subject "Management of Infantile Glaucoma."

The Schoenberg lectures are presented annually in memory of Dr. Mark J. Schoenberg, distinguished ophthalmologist, who died in 1946. He was a founder and first president of the New York Society for Clinical Ophthalmology, and first chairman of the Committee on Glaucoma of NSPB.

AAO Home Study Courses

The 1959-1960 Home Study Courses in the basic sciences related to ophthalmology and otolaryngology, which are offered as a part of the educational program of the American Academy of Ophthalmology and Otolaryngology, will begin on September 1 and continue for a period of ten months. Detailed information and application forms can be secured from Dr. William L. Benedict, the executive secretary-treasurer of the Academy, 15 Second Street S.W., Rochester, Minnesota. Registrations should be completed before August 15.

OPHTHALMOLOGY

SECTION XII

EXCERPTA MEDICA

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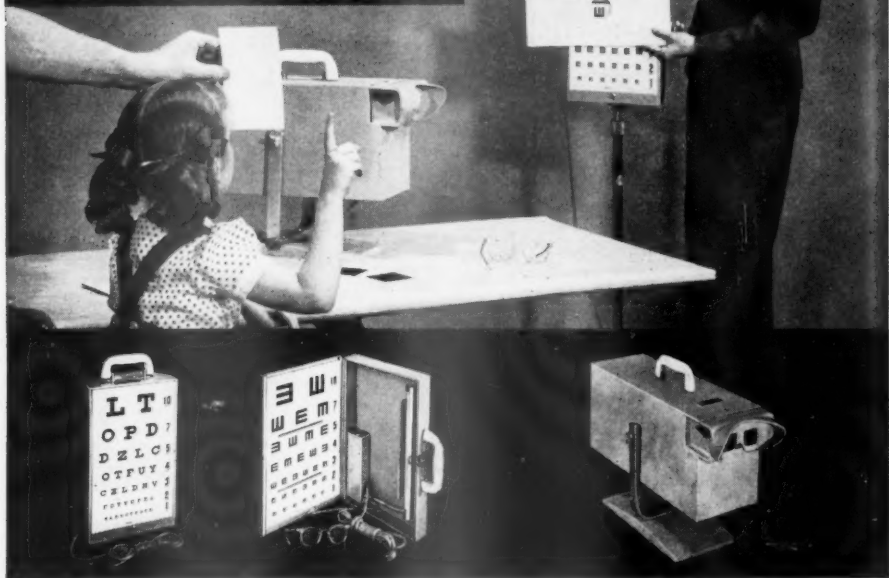
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OPHTHALMOLOGY

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